CONTENTS

VOL. XXXV. GUELPH, ONT., MARCH., 1923 NO. 7

PAGE
The Flutes of the Frogs (Poem) ..... vi.
Solving the Growers' Problems by Plant Breeding 261
In a Bavarian Village 264
Genetics in Fur Farming 267
Manitoba Agricultural College, from the Air (illustration) 269
Post-Graduate Work in the United States 270
Propagate Your Own Roses 273
Fertilizers for the Home Garden 274
An Introduction to Biochemistry 276
Scarifying Sweet Clover Seed 278
Appetite 280
Editorial 282
College Life 286
Macdonald 291
Athletics 293
Alumni 299
Locals 301

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THE FLUTES OF THE FROGS

By Lloyd Roberts

'Tis not the notes of the homing birds through the first warm April rain,
Or the scarlet buds and the rising green come back to the land again,
That stirs my heart from its winter sleep to pulse to the old refrain;

But when the miles of bubbling marsh and the valley's steaming floor,
Shrilling keen with a million flutes the ancient spring-time lore,
I hear the myriad emerald frog awake in the world once more.

All day when the clouds drive overhead and the shadows run below,
Crossing the wind-swept pasture lots where the thin, red willows glow,
There's not a throat in the joyous host that does not swell and blow.

And all night long to the march of the stars the wild mad music thrills.
Voicing the birth of the glad wet spring in a thousand stops and trills.
Till the pale sun lifts through the rosy mists and floats from the harbour hills.

THE O. A. C. REVIEW

"THE PROFESSION WHICH I HAVE EMBRACED REQUIRES A KNOWLEDGE OF EVERYTHING"

VOL. XXXV. GUELPH, ONT., MARCH, 1923 No. 7

Solving the Growers' Problems by Plant Breeding

By E. F. Palmer, B.S.A., Vineland Station, Ontatio.

THE Ontario Horticultural Experiment Station was established, fortunately, in the heart of a famous fruit district, famous in Canada at least. Surrounded by fruit growers, the Station workers have gradually come to the conclusion that the chief fruit problems are problems of variety adaptability. By variety adaptability I mean not only adaptability to environment but more particularly, market adaptability. The sense in which I use that phrase will become clearer in succeeding paragraphs.

This is not to infer that cultural problems are not of importance also. It is felt, however, that what is most needed now in cultural problems is some method or methods of getting the average grower to put into general practice what we already know of plant nutrition, pruning, etc. Perhaps this thought applies more to the Niagara District of Ontario than elsewhere, due to the almost total freedom from crop failure of that section. In any case since 1914 plant breeding has engaged more and more of our attention; the production of varieties to meet the needs of our own peculiar market conditions. This, we regard as our most important cultural or economic problem.

Some of the main problems on which we are working may be here stated.

1. Increased earliness and improved quality and yield in early strawberries.
2. A heavy yielding late strawberry to fill in the season between the main strawberry crop and the Cuthbert raspberry. This is essentially an economic problem to hold pickers profitably throughout the small fruit season, and made necessary by the defection, from disease, of the Marlboro raspberry.
3. An early raspberry to take the place of the Marlboro, and for the reason given in (2).
4. A mid-season raspberry to supplement and possibly finally take the place of Cuthbert, which seems to be rapidly succumbing to disease (mosaic).
5. A seasonal succession of peaches of Elberta type as to vigor, productiveness, shipping quality, etc., but of improved dessert and home canning quality if possible.
6. More desirable early yellow flesh peaches of the season of Greensboro, and of good shipping quality.

The above peach breeding projects, if successful, would permit of local markets absorbing more peaches because of extended season, and would further permit of greatly extended planting through the opening up of the Canadian West Market. We can ship Elbertas there quite successfully, but not other varieties, so that the shipping season is extremely short. The Elberta, with us, is overplanted with consequent over-production at *one season*—but not for the season as a whole. More even production throughout the season is necessary.

7. Varieties of grapes with the shipping, storage and dessert qualities of the Rogers' Hybrids and the productiveness and cosmopolitan tastes of the Concord. The Niagara District produces annually from fifteen to eighteen hundred cars of grapes, but acreage and total yield could probably be doubled if the above type of grape could be produced. It would permit of the long haul to the Prairie Provinces, and of storage for local markets for a considerable period, till the New Year or later.

In addition to the above fruit breeding projects, several other problems are receiving more or less attention. These include hardiness in wood and bud of the peach; a hardy red winter apple; blight resistance in pears; hardiness and thornlessness in Blackberries; drought resistance and thornlessness in gooseberries.

In connection with the last-named project, it may be of interest to note that we have successfully crossed the gooseberry and the black currant with the following result: All of the resulting plants, about a score, are of either one of two types. One type is indistinguishable from the black currant (male parent in cross) in all gross characters as growth, foliage, fruit, odor, etc. The other type closely, though not entirely, resembles the gooseberry in form of plant, foliage, etc., but is practically thornless; in other words, a thornless gooseberry, which would seem to be the end of our quest. Nature, however, overlooked a comparatively minor detail. The plants blossom but bear no fruit. They are sterile. Both currants and gooseberries are growing alongside, so that there is ample opportunity for cross-pollination if such were needed. Probably a Dorsey or an Auchter could tell us what is wrong. In the meantime we are selfing the black currant type but doubt the result. The Topsy black currant, originated at Ottawa, is a gooseberry-currant cross but selfed seedlings show no breaking up.

STRAWBERRY BREEDING

Some 10,000 hybrid plants have been fruited in the past eight years. No further crosses have been made since 1920, the effort since that time being to discard as rapidly as possible from the material already growing in an effort to prevent being completely snowed under. We believe in working with large plant populations, but we are also coming to believe in early and severe culling out, even though what might have been a seedling or hybrid of merit is occasionally destroyed. If we were making genetic studies we might work differently. But we are not. We are working primarily for variety improvement, sufficient notes of course being made on the behavior, desirability, etc., of each cross as a guide to future work. This holds true of the other fruits as well as strawberries.

The method followed with strawberries has been to severely cull out in the first and second years of fruiting, propagate and grow the selections in double 25-foot rows, select rigidly again, grow in double 50-foot rows, select once more and distribute to growers for the final trial. Following this plan, the 10,000 has been rapidly reduced to one good variety, seventeen that may be good, and twenty-eight that have only reached the 25-foot row fruiting test. Few will survive.

Our one good seedling (H. E. S. No. 2) is a cross of Pocomoke x E. Ozark. Parenthetically it may be noted that of innumerable crosses made, eight of our first ten selections have Ozark as either one or the other parent. H. E. S. No. 2 is an early season berry, two or three days earlier than Bederwood or Michels and in our judgment superior to those varieties in every way. Particularly the fruit holds its size well throughout the season.

Raspberry Breeding

As parents the three varieties, Marlboro, Herbert and Cuthbert have been used almost exclusively up to the present. In new work other varieties are now being used. No description of these well-known varieties need be given here. Marlboro has been used primarily for earliness and Cuthbert for quality. The hardiness of the Herbert is not an important factor in the Niagara District.

During 1913 and 1914 these three varieties were both selfed and used in reciprocal crosses. As shown in the accompanying table, a total of 5,329 resulting plants were finally set in the field to fruit. By 1918 this was reduced to fifty, which were then propagated and grown in double fifty-foot rows for further test. By 1921 ten only were left and these have been set in a new plantation, not yet fruiting, with a double fifty-foot row of each. Of this ten, one is considered outstanding and is being propagated as rapidly as possible.

This hybrid (No. 14038) is a cross of Cuthbert by Marlboro. Compared with Cuthbert, with which it competes in season, No. 14038 is an equally or possibly more vigorous grower, canes stouter, more upright, and entirely free of the small pricks common to the Cuthbert. The fruit is larger and of firmer texture so that it should prove a better shipper. The fruit is more exposed on the cane than the Cuthbert and therefore easier to gather. On the other hand, No. 14038 is of somewhat poorer dessert quality than Cuthbert and the berry is of lighter color, making it less desirable as a canning berry. However, it is probably sufficiently good in both these respects that they need not necessarily be considered faults.

Referring again to Table I., it is interesting to note that the only hybrids to survive the second weeding out were those with Cuthbert as one of the parents. Marlboro-Herbert crosses, of which there were 1,100 plants (counting reciprocals), gave only four saved in the first selection and none in the second. Herbert-Cuthbert was little better, seven surviving the first selection and two the second, out of 1,638 plants originally. The bulk of those selected, both numerically and in percentage, have been in the Marlboro-Cuthbert crosses, thirty-seven surviving the first selection and eight the second out of 1,972 originally. Nothing of account resulted from selfing, though in fairness, the number of plants grown was considerably less.

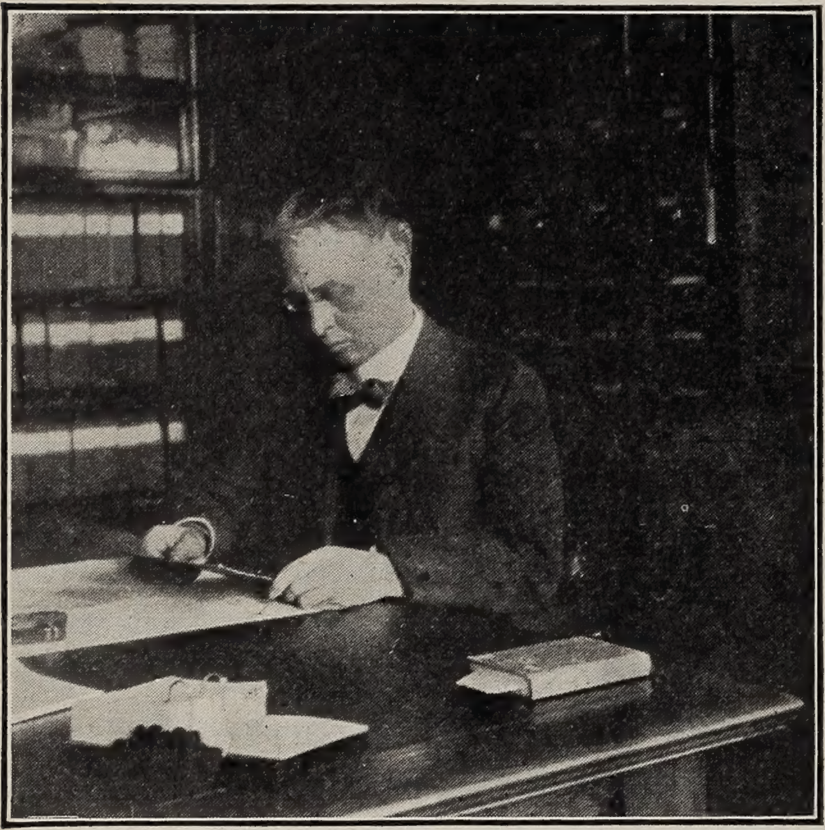
TABLE I.—RASPBERRY BREEDING
1913 AND 1914

Cross	Hybrids Fruited	First Selection 1918 (25-Foot Rows)	Second Selection 1921 (50-Foot Rows)	Promising
Marlboro x Cuthbert	1,435	24	5	....
Marlboro x Herbert	700	4	....	....
Herbert x Marlboro	400			
Herbert x Cuthbert	1,038	6	1	....
Cuthbert x Marlboro	537	13	3	1 (No. 14038)
Cuthbert x Herbert	650	1	1	....
Marlboro (Selfed)	140	2	....	....
Herbert (Selfed)	316	....	....	....
Cuthbert (Selfed)	113	....	....	....
Totals	5,329	50	10	1

(TO BE CONCLUDED IN THE NEXT ISSUE)

In a Bavarian Village

By O. J. Stevenson, M.A., D.Paed., Professor of English



Dr. O. J. Stevenson

IT WAS a disagreeable experience. I had never before been turned away from an inn as an undesirable guest; and yet here, in this little Bavarian Village of Uffing, just because we happened to be "English," we were told bluntly that there was no room for us. We knew that there was really plenty of room, for the inn was spacious enough to accommodate a couple of score of travellers and a hundred people could easily have sat down at the tables in the great living room. But when we asked for beds the landlady scowled at us and went off to consult her husband—and brought back a surly answer.

What was to be done? It was raining out of doors and we carried heavy club-bags. The last train had gone. It was getting dark and we did not know a soul in the village. To gain a little time we ordered coffee and sat down at a long table with wooden benches. The great hall looked inviting enough, for it was hung on all sides with hunting trophies; and a company of peasants at the table next us were having a hearty meal, punctuated by remarks at our expense, for we were the object, on all sides, of unfriendly curiosity.

When our coffee was finished we decided to set out and see what money could do to procure us beds in some of the peasant homes. But we had scarcely gone more than a few hundred yards from the inn when, as luck would have it, we met a gentleman and lady, who were accompanied by two large black hunting dogs. The gentleman spoke English, was English, nay more, a Canadian-American Professor from Baltimore, who having married a German wife, was spending the summer in Bavaria at his wife's home. We told him our plight, and he offered to try to secure lodgings for us in a little inn which he knew of on the other side of the village. While we waited in the rain, a small boy from a neighboring house amused himself with throwing stones and trying to set his dog on us; but in a little while the professor came back to say that he had secured lodgings for us. An hour later we were seated comfortably in the dining room with an excellent supper before us and waited on by a smiling comely young woman, who spared no effort to supply our wants.

Our bedroom was primitive enough, with rag-carpet rugs on the floor and on the walls two or three chromo copies of religious paintings by Rubens. At one side of the room was a great chest of drawers filled to over-flowing with webs of fine linen, worth a good many hundreds of dollars. The chest was a "wedding chest" with the name of the bride painted on it, and it had evidently been part of the dowry which some German girl had brought to her husband some hundreds of years ago. The washing utensils consisted of very small pitchers and basins. The beds were made up of the usual mattress and sheet, but for covering there was only one great billowy feather tick like an enormous pillow—no other bedclothes at all. There is this much at least to be said about this sort of covering; it is light and warm and infinitely cleaner than the usual soiled "comforter" in an American hotel, for it has a cover of clean fresh linen. The peasant in the next room to ours came in late and practised on a trombone or some similar instrument; but we were too sleepy to care, and, besides, our door had a lock on it and we felt that in spite of our reception at the other inn, we could sleep in comfort and safety.

A Street Scene in Bavaria

But before going to sleep there was a minor detail which it was difficult to settle. Should we sleep with our window open? There were perhaps two hundred houses in the village, and from each of the two hundred there arose an all-pervading odor of cow manure. The whole village was filled with the odor, so that it was impossible to escape from it. The explanation was not far to seek. Every villager keeps cows or oxen. The stable forms part of the house and at every back door there is a great heap of manure. This manure is not carted away while it is fresh, but is soaked repeatedly with water and the liquid manure is drawn off, leavino a pile of rotted manure which smells tg heaven! In the front of the house there is often an abundance of flowers, but it is not the perfume of the flowers that scents the summer air. With us it was not a question of fresh air or no fresh air, but rather of manure or no manure. But in the end our open-window training prevailed, and we rather reluctantly threw back the casements. We were very tired, and in spite of the unusual fragrance we were soon sound asleep.

In the morning, on going down the hall, we opened a door at the head of the stairs, and found ourselves in a loft half-filled with hay, with chickens scratching busily among the chaff; and below we could hear the munching of the oxen and the rattling of the chains in their stalls. Below stairs an excellent breakfast awaited us, and our smiling hostess apparently could not do enough for us. After breakfast we set out to explore the village. It is a picturesque little place in the valley, with a foaming stream running down to a peaceful lake beyond; a sawmill with great piles of lumber; several flour mills; twisty, climbing streets; picturesque frame houses freshly painted, some with window-boxes and hanging baskets and most of them with flourishing gardens; no signs of poverty anywhere! Wagons drawn by oxen, or occasionally by a horse and an ox yoked together; and peasants who eyed us curiously as they passed.

Several times in our wanderings during the forenoon we got lost, and had to inquire our way of the peasants, but we found them surly and uncivil. In Nuremburg we had everywhere met with courtesy; but the German peasant, we were told, is bitter, for he has been taught that the English and French attacked Germany without reason, and that the Germans were fighting merely to defend their country against the foreign invader. That was the real reason why there was no room for us in the village inn.

During the forenoon we went up to the village church, which both inside and out was in the course of repair. In the graveyard there were a number of monuments to German soldiers, and one in particular we noticed in memory of a "dearly beloved son," who had been killed in the Battle of the Somme, and who in the words of the inscription had "given his life in defence of his fatherland." On the face of the black stone there was an inset of the photograph of the dead soldier, and in some home in the little village there had been a heartache and a bitter sense of loss. We stopped, in passing, to take a snapshot of the monument, although there were a couple of workmen on the steeple above who looked on with evident resentment and we had a few moments of anxiety lest a brick should be accidentally tossed down from above.

But the most interesting thing after all was not the church nor the houses, but the people who passed us in the course of the day on the village street—drivers shouting at their oxen; wagons with long tanks of liquid manure; pedestrians in green felt hats with jaunty cockades and quaint embroidered waistcoats; men and women returning from the fields with scythes on their shoulders; barefoot boys and girls; and peasant women with tight cotton basques and full black skirts, with white aprons, and most of them wearing little stiff felt hats which sat on their heads like black saucers with inverted cups.

In the afternoon we were to take the train to Oberammergau and we returned to our inn to pay our reckoning and bid farewell to our hostess. Our entertainment had been excellent, with clean comfortable beds and three of the best meals we had had in Europe. Our bill was a little over one hundred marks for each of us, which as the rate of exchange then stood, was about twenty-five cents apiece. With so modest a bill for such excellent entertainment, a traveller could surely afford a generous "tip"; and when we set out for the train our smiling hostess stood in the doorway and called after us a cheerful "Auf Wiedersehen."

Genetics in Fur Farming

By Dr. John W. McArthur

AGRICULTURE, most ancient of the general arts, has been steadily "broadening out" all through its history. From those late Paleolithic days, when our ancestors first began to shelter and care for the dog and guard their patches of wild cereals, farmer pioneers in each generation have tamed, reclaimed from the wild, and disseminated one after another of the farm animals and crop plants. All through this time the widening scope of agriculture has been manifest more and more in the increasing number and diversity of its products, the ever-increasing specialization of its methods, and in the growing recognition of the need of choosing products adapted to climatic and local conditions.

Doubtless the most spectacular recent evidence of these tendencies is to be found in the rise and firm establishment of the latest branch of agriculture in its broadest sense—the comparatively new industry of fur-farming, involving a dozen or more of the best fur-producing animals, requiring for each species a specialized technique, and as a whole particularly suited to development in colder climates and sparsely settled, wooded regions.

The history of this movement, like that of agriculture in general, has been largely economically determined. In early days the primitive forests yielded the hunter and trapper a fair supply of wild furs, meeting the ordinary demands of the trade in those times. Since then we have seen the rapid depletion of native woodlands for lumber and wood-pulp; settlers' homes have largely replaced lumbermen's huts and trappers' camps; before the axe and trap and gun the larger fur-bearers have retired into the remote and dwindling forest areas. Their haunts despoiled, their numbers sadly diminished, the wilder forest animals are in such imminent danger of extermination that many authorities warn us of the approaching end of the "age of mammals". A vicious circle is already established; the wild fur-bearers decrease steadily; the demand for pelts as steadily rises (and all the more as population and wealth increase); with higher prices the hunt for pelts is further stimulated, and the remnants of forest are year by year combed more finely for furs by an army of trappers. This self-limiting process evidently defeats its own ends. One obvious recourse is to the domestication of the chief fur-bearing species.

Each species to be introduced, domesticated and improved brings special tasks for the animal husbandman and geneticist. The imported species may require acclimatization. The indigenous species require at least semi-domestication under suitable artificial conditions and care. This is essentially all that has been done for many forms that are bred and used as found wild, e.g., musk-rat, beaver, mink, otter, marten, fisher, Russian sable, Alaska seal, oppossum, raccoon, buffalo, reindeer, etc. Rearing methods for these and other useful fur animals were described for 1914 in "Fur Farming in Canada" (Ottawa). Few, if any, of these forms are not capable of some improvement by breeding for tameness, hardiness, prolificacy, fertility, size and quality of furs and in other ways. But breeding is of first importance in other cases where there are several wild varieties of one species, varying greatly in desirability, and all intermingling freely and mongrelized in nature. Here it is necessary to isolate and fix the valuable strains in improved pure-breeding lines. This is notably true of the skunk, of Karakul sheep (its varieties furnishing furs as different as "Persian Lamb," "Karakul," "Astrachan" and "Krimmer"), the Arctic fox and the common red fox.

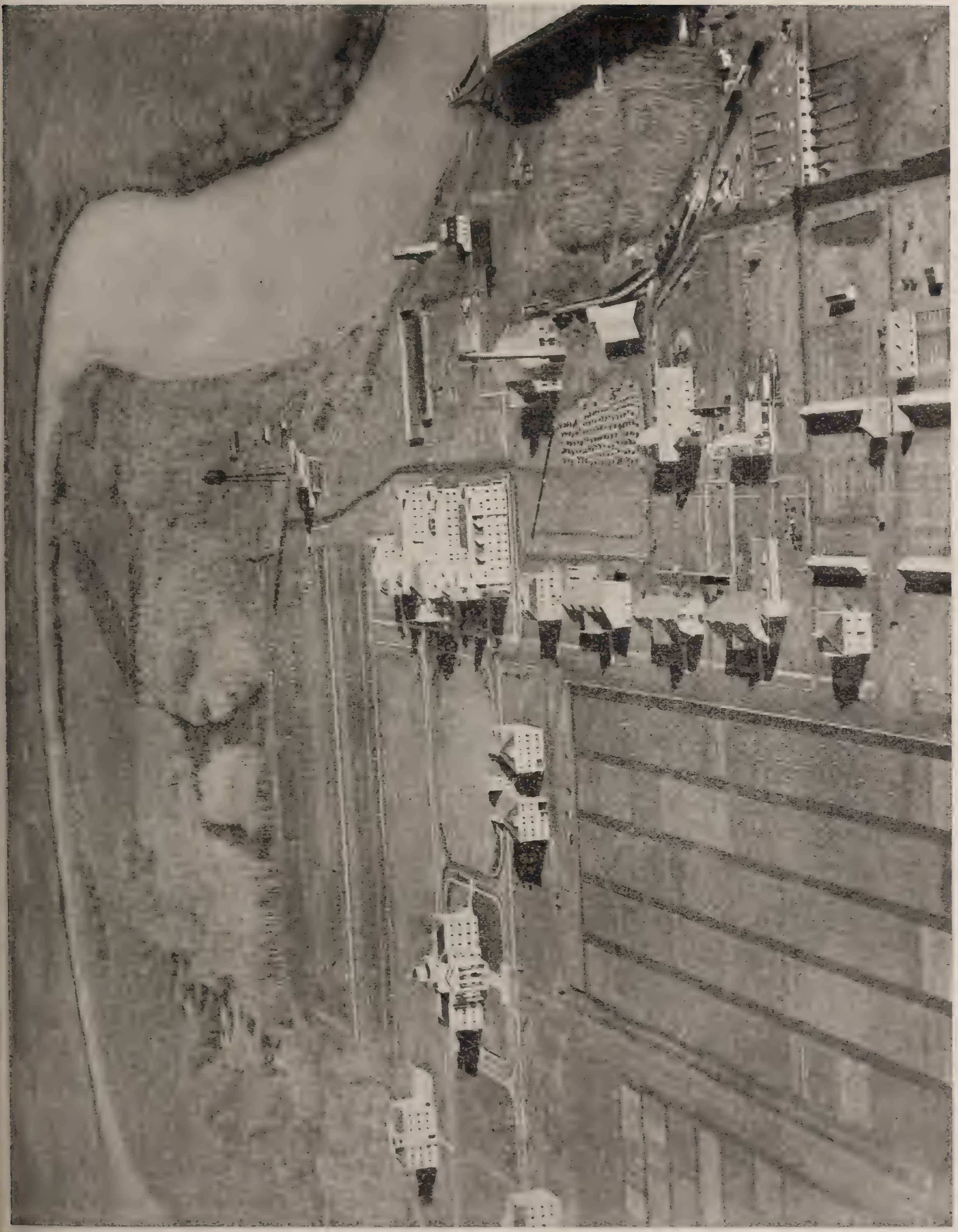
Black and Silver Foxes

The common red fox species, of wide geographic distribution in both Old and New Worlds, is composed of many races differing much in size, form and coloration. The chief color variations are most interesting and important, for they include, besides the usual color of Reynard the Red, also the black and silver color phases free from red, and a whole gamut of blends of red and silver-black in almost all proportions from "rusty silver" to a slightly darkened or silvered red. In all the amount of white on the tail tip, underparts, and other regions is also highly variable. Three general color-phases have long been distinguished by the furrier: red, silver-black, and "cross" or "patch". The prices of the pelts range from a few dollars for the common red, several times more for the "cross," up to many hundreds or more for the purest dark silver. In nature the foxes are trapped, according to one estimate, in about the proportion: 1,000 red to 100 cross to 10 silver to 1 black. Other figures show the more valuable pelts in a higher ratio (so eagerly are they sought), but it is safe to say that the 1-2 per cent. of the rare but inherently beautiful and always attractive silver-black furs have a commercial value nearly equalling that of all the others. Little wonder that the pioneers in Prince Edward Island, where these foxes are most numerous and valuable, saw that a most remunerative industry might be established if the silver-blacks could be reared in captivity and bred as a pure strain after eliminating all red and cross-fox blood.

The solution of these problems, aided by prominent English and American geneticists, soon revealed the Mendelian nature of color inheritance in the fox. The mating of a pure silver, dug out on "the island", with red yielded a litter of "patch" ("cross") pups, with some red on the sides and neck at least; in some similar matings the red colors largely dominated over the black and the pups were dark red. Interbred, these hybrid foxes (or others like them from the wild) produced: one-fourth of the litter pure red, one-half blend or dark red, and one-fourth pure silver-black. These, or almost any other, silver-blacks bred together had full litters of similar pure silver-black; and from these by mating like with like in assortative mating the desired strain has since been continued. On many ranches lack of numbers necessitated crossing of silver with cross, giving a progeny, one-half pure silver and one-half cross; or, if a cross fox was mated with a red, one-half red and one-half cross.

Silver-black, as contrasted with red, is evidently a unit-character, but it is itself really composite, for other hereditary factors modify the amount of silvering of the black hairs. The market grades of these pelts run all the way from pale silver, light, medium and dark silver, to a nearly or absolutely unsilvered solid black. These grades may be found breeding true each in its own line. When black mates with palest silver the young are a medium or dark silver blend, the pale color behaving as a partial recessive. Since of all market pelts the most valuable are those extra dark raven-blue black with just a sprinkling of long silver-banded

(Continued on page x.)



Manitoba Agricultural College from the Air

Post-graduate Work in the United States

By J. S. Shoemaker, B.S.A., M.S.

AT THE present time the subject of post-graduate study is receiving considerable attention in Canada, particularly by those in the agricultural profession who control, and by those who desire, positions in experimental research, or teaching work. While taking advanced courses the writer had the opportunity of making some observations which may be timely and of interest to anyone contemplating post-graduate work in the United States. It is a common occurrence for the person crossing the border for graduate study to be decidedly hazy of what lies before him, although there is ready access to the various college calendars which give much of the information necessary for a good understanding of the courses offered. Consequently some time is usually lost before things are satisfactorily straightened out. It is a good policy for the prospective graduate student to be as well informed as possible beforehand on what to expect, and possibly a few general remarks may be of some assistance.

Only a few years ago the student on entrance to the O. A. C., who had practically no academic training would find himself in the same year with fellows possessing Bachelor of Arts degrees, teaching experience, and other superior stages of scholastic attainments. Somewhat similarly, the graduate student will find himself classified with men of varied degrees of learning and experience. Arbitrarily, graduate students may be divided into the following classes: (a) The possessor of a degree who has been unable to secure a position. (b) Those who have declined work because of the small salary, negligible experience, and poor prospects of advancement. (c) The person who reasons that the training leading to an advanced degree is a necessary qualification for success in his line of work. (d) The class of students often referred to as "Degree crazy". (e) The graduate of a few years who plans by continued study to secure an advanced degree and thus prepare himself for promotion. (f) The professional man of standing, whose work is of such a nature that he can put in an occasional term of residence. (g) The junior faculty member who has obtained permission to carry a few hours of credit in addition to his regular duties.

As practically all colleges of recognized standing in the United States are conducted on the elective system, it is very improbable that members of the above classes, even if specializing in the same subjects, would arrange their schedules in the same way. Very briefly stated, the student just out of school will probably continue his fundamental training in minor electives, and in his major problem secure specialized training and experience in his chosen field. On the other hand, the person who has been out of college a few years should have matured his knowledge by reading and experience and may select the conference method in place of the regular lecture and laboratory system. Frequently the graduate student takes only the lectures of the minor course selected and arranges the laboratory part to work in directly on his major problem. While many formalities must be gone through before the degree is conferred, the advanced student is not usually subjected to strict supervision. He must often depend on his own initiative and resources, as the committee in charge of his work prefer to give suggestions rather than directions.

Most colleges in the United States require forty-five hours of credit for the Master of Science degree, and an additional ninety to fulfill the Doctor of Philosophy requirements; or one to three years of study. For the Master's degree about thirty credit hours will likely be required on the major subject, and the remaining fifteen divided in minors. In this connection the question is often asked, "Just what does a credit hour mean?" In an explanation of a credit hour it should be realized that in the semester system one hour of lecture equals three hours of laboratory time. Therefore, to obtain one credit hour in a regular term necessitates attendance at one one-hour lecture period, or one three-hour laboratory period, per week, throughout the three months. A maximum of fifteen credits is the usual allowance per term, and hence the student can generally carry only two or three subjects in a given session.

For the Doctor of Philosophy degree a good reading knowledge of two foreign languages, generally German and French, is an absolute requirement. The Master of Science candidates need only one and in many departments this will be waived on request.

The final examination for the degree consists of an oral examination of about three hours' duration. The examining committee is selected by the graduate dean and is comprised of the senior staff members of the department in which the major work was taken and of the men who gave the minor courses. These final examinations are open to the public and anyone may come and ask questions. The committee at first direct their inquiries along the lines of the routine work covered, and finally to test the general preparedness and ability of the candidate. In addition to the final, if minor work is taken in undergraduate classes, quizzes and tests are given from time to time. When the class is composed mostly of graduate students, a written examination is usually dispensed with and a write-up of the work or a short oral suffices.

To many who contemplate post-graduate work some financial assistance will be necessary. Practically all the large United States Colleges have Fellowships, Scholarships and Assistantships available every year. A person wishing to be considered for one of these openings should make inquiry and application as far in advance as possible. These positions may take the form of teaching, demonstration, experimental, research or clerical work. The remuneration will depend on the college itself, the nature of the work, and the amount of time given to the duties required. Under average circumstances, about seven hundred dollars will be necessary to finance a nine month's course.

The room and board problem is always of pecuniary concern. Unless he becomes connected with some fraternity, the O. A. C. man will likely room in a private dwelling house and take his meals at a boarding-house, cafeteria or lunch-room. In this connection it is not amiss to say that much of the success of the course will depend on the ability of the student to congenially adapt himself to the environments.

Is post-graduate work worth while? The correct answer to this question depends upon a proper interpretation of conditions peculiar to each individual case. Up to the present most men who have completed advanced degree requirements in the United States are satisfied that their time and money has been spent to good advantage. Unfortunately, however, many will not return to Canada. The fact that increasing numbers of Canadians are entering the United States every year for post-graduate study in her agricultural colleges indicates that such training is regarded with favor.

Mills Hall—2nd Prize Photo—S. Hilton, '23

Propagate Your Own Roses

By Paul Saunders, '23.

MANETTI MEANS MORE MONEY

ONE thousand Manetti stocks may be purchased for twenty-five dollars, and each stock is capable of bearing one budded rose. Hence a five-dollar rose may be obtained for two and one-half cents.

These stocks are grown extensively in France, and are nothing more or less than hardy wild roses. Rooted stocks may be received and planted in the spring of the year. All buds near the base of the stock should be removed before planting, thus paving the way for a smooth surface.

When budding time comes, the stocks are planted eighteen inches apart in rows three feet apart, and are kept well cultivated all season. In August they may be pruned back until they are only about eighteen inches high. Be sure to leave two or three healthy leaf-bearing shoots.

It is now necessary to remove the buds from the roses which are to be propagated. Branches of the past season's growth, bearing two or more sound buds, are cut off and placed either in a pail of water or wrapped in damp moss. These are then carried to the stock plantation for insertion on the stocks.

Clear away an inch of soil at the base of the stocks. Amateurs frequently make the mistake of baring the base of too many stocks before commencing propagation. By cleaning the soil away as he proceeds with his budding, the propagator is insured of the dampness of each and every stock, thus facilitating his work. It is advisable to propagate as close to the roots as possible.

A cut across the bark and down to the wood, and a longitudinal cut about half an inch on each side of it are now made—the two incisions resembling a cross X. A bud is now cut from the branch with a thin piece of bark half an inch long on each side of the bud, and having as small a piece of wood as possible attached to it. If much wood is present it should be removed by giving it a quick pull with a pruning knife.

It is wise to insert a bud on the north-east side of a stock. This prevents drying out in hot weather. The bark of the stock is lifted with the blade of the pruning knife, and the bud is inserted in the cross-like incision. Raffia is then tied around the stock above and below the bud to hold it in place until it becomes united with the wood of the stock. It is not necessary to replace the soil removed. In a month's time, if the bud has "caught," all raffia is removed. The stocks receive no further attention until the following spring, when they are cut back to within four inches of the bud. Care must be taken to keep all growths from the buds supported, else they will break off. As soon as these growths are strong, the stumps of the stocks are removed. After growing for one season, the roses may be transplanted to the garden.

In this very simple manner Hybrid Teas, Hybrid Perpetuals and Rambler Roses may be propagated. I would advise amateur gardeners to economize; to buy stocks in place of roses, particularly so when the best varieties of roses may be secured so easily and with very small expenditure of cash.

Briar stock (Rosa Canina) may also be used successfully for rose propagation. These two varieties of stocks may be purchased from Canadian nurserymen.

Fertilizers for the Home Garden

By S. Waterman, B. S. A., Department of Chemistry

SO MANY times one is asked, "What is the best fertilizer for my garden?" that it is thought a short article might be of interest to the public generally and particularly to those whose chief interest is a garden.

In the first place, one must study his soil conditions. Is the soil clay, loam, sandy or gravelly? Does it contain plenty of "humus" or decayed and decaying organic matter and last, but not least, does it require lime? What kinds of crops are intended to be grown and are they early or late? Has the land been manured lately? If so, how much manure was applied? These are some of the questions which must be answered before a particular recommendation can be made.

In general one can, however, recommend a course of procedure which will give fair satisfaction and a good return, whether the crop be vegetables or flowers. The type of soil has a good deal to do with a successful garden, as some vegetables and flowers like an open porous loam, while others will do as well on a clay. In general, a loamy soil is the best. This should contain plenty of organic matter, which can be supplied by ploughing or digging in a heavy coat of barnyard manure in the fall. If the soil is inclined to be heavy, strawy manure will lighten it up. If a loam, it is better to use fairly short manure. If manure is not readily obtainable as in cities, leaves, vegetable tops, grass clippings or any other form of vegetable matter must be used. Organic matter is the first essential because it puts the soil into better physical condition and contains all the plant food required by a garden. With plenty of manure to put organic matter and plant food in the soil we do not need to worry about buying concentrated fertilizers.

Concentrated manures or commercial fertilizers are sold for the purpose of supplying nitrogen, phosphorus and potash in a form which the plant can readily absorb and assimilate. These three elements are often lacking in soils and since each has its specific use and effect, we will discuss each in turn.

Nitrogen, which may be purchased as nitrate of soda, or blood meal, is a leaf and stem grower; hence is good where we want leaf growth as in cabbages or lettuce. At the same time it gives a good strong plant, if other plant food is present, a plant which will produce loads of fruit or large roots. However, care must be taken in applying nitrate of soda, which is generally used, because, if too strong, it will burn the foliage, in solution, and will often kill the plants outright. If applied, it must be sprinkled on the ground and worked in so as not to touch the plants, or put on with a watering can: one teaspoonful to two gallons of water, applied after the plants are up and again a month later.

Blood meal, on the other hand, rarely gives trouble but should be worked in when preparing the seed-bed at the rate of a cupful per two square yards.

Phosphorus is a flower and seed producer. It may be purchased as acid phosphate or bone meal. The latter also contains a little nitrogen as well. Phosphorus tends to hurry a plant to maturity, hastens blooming and setting of fruit. Of the two forms, if quick effect is desired, acid phosphate is preferable; but it must be carefully used as it is apt to destroy seedlings if placed near the seed. It does this by absorbing water which the seed needs in sprouting, so at least, sprouting is delayed. If used acid phosphate should be well worked in at the time of getting the ground ready, before seeding, at the rate of not more than a cupful per two square yards.

To Produce Good Results with Flowers.

Bone meal is perfectly safe to use in any quantity. One cannot use too much of it as far as any danger of harming plants is concerned. It gives a safe, steady supply of phosphorus and nitrogen to plants, and there is little loss by leaching with rains. It is good for every garden crop.

Potash, purchased as muriate or sulphate of potash, aids in the formation of starch and therefore is indispensable for the raising of potatoes, onions, beets, carrots, etc., which store up starch in bulbs, roots or tubers. It also gives brilliant colors in flowers and aids in seed productions. It is soluble in water and should be handled as carefully as nitrate of soda and in the same amounts.

In order to produce good results with flowers, it is well to remember that very heavy applications of manure or any material containing nitrogen will cause a rank, lush, growth of stem and leaf with few flowers. If such be the case, an application of acid phosphate and muriate of potash, as before described, will prove of benefit. Some flowering plants, such as dahlias, do not like a rich soil and bloom more freely in a comparatively poor soil. The writer grows them in gravelly soil and is always rewarded with splendid blooms. As a rule, bone meal is the only thing a flowering plant requires with, perhaps, a sprinkling of potash to give added purity and brilliance to the color of blooms.

Usually the average gardener is wise if he makes use of two fertilizers only in addition to manure, which of course is indispensable. These are pulverized sheep manure and bone meal. They supply all that a plant requires, are safe to use and produce very satisfactory results. To start the young plant off in the spring, a slight dressing with nitrate of soda is necessary and to improve the color of flowers a little muriate of potash or chimney soot.

There is no reason, however, why the gardner should not experiment with different fertilizing materials. He may possibly learn a great deal more than bulletins or articles may teach him; also, there is no doubt that it will prove very interesting and not expensive.

An Introduction to Biochemistry

By H. L. Fulmer, B. S. A., Department of Chemistry

THE subject of Biochemistry is being presented as a regular and collected subject on the Ontario Agricultural College curriculum for the first time this year; and since, as the Editor of The Review intimated, this study seems to be something new, it may not be amiss to say a word or two about it by way of a public introduction to the student body. In that, as a course, it forms a part of the training for Junior students in most of the options of the Degree course, this little note may also serve the useful purpose of preparing the minds of those students in the present second and first years, who will in due time become Juniors. As a name it will thus, at any rate, not be entirely new to them.

Chemistry was for many years—and still is to most people not in daily contact with it, or who may not be somewhat familiar with its functions and terminology—something to conjure with, a sort of "black magic." In fact, it was at one time *only* an art, practised by the few, a fruitful fountain of philosophical imaginings, and always a hoped-for source of the elixir of life by those who wished to live forever, or those who longed for a source of perpetual youth. To the alchemists and their disciples it was indeed to be a bonanza when once they would be able to compound the proper formula for changing the baser metals into the noble.

But it is now, in this twentieth century, a far cry from the time of the Philosopher's Stone and the period when chemistry was defined as "the artificial preparation of gold and silver." We now have a Science, and it deals with everything with which we come in daily contact, so long as that thing is ponderable. For is it not a study of matter—its make up and its transformations? Who then can eat his daily food, don his daily raiment, make his daily ablutions, consider his own body, or look upon nature and her kaleidoscopic alterations and calmly say he is not a chemist! Yes, we have a Science in which we all take part and in which we are all vitally concerned, and whose records fill libraries to overflowing even though the fringe only is touched and, relatively, nothing but shallow cultivation so far has been practised

Indeed, so far reaching and diversified has chemistry become that it is necessarily, in its applications, divided into groups according to the particular phenomena of nature with which it deals. And it happens that Biochemistry is merely one of these groups.

How can we describe Biochemistry? Obviously it deals with the Chemistry of Life. If so, then the very heart of the problem which confronts the biochemist lies in the profound and complete chemistry of the body cells, the units of which all living things are composed, no matter how differentiated or how completely specialized within the organism these may be. The task is to refer all the phenomena of life to the laws of chemistry and physics, for it is said, and probably quite truly, that life in all its forms, from its beginning to its end, is the highest, most complex expression of the transformation of matter and of the transformation of energy.

The crux of the whole situation, then, must necessarily be the extent to which we can gain an insight into the chemical and physical make-up of the cell. This is the great work which the biochemist has before him and until such time and place as he has completely succeeded he cannot hope adequately to interpret or control the things which happen in a living organism. The chemical changes which manifest, or are manifested in, living movements or responses, which latter, in toto, constitute life, cannot be possibly known until such time as the chemical make-up of the systems responsible is known, both before and after the manifestations. Also the laws governing, and the instigating forces of such changes must be determined.

Much has been accomplished through biochemical research and investigation, to choose a particular field, in the realm of medicine. Through the recognition and study of the regulatory secretions of the living animal, such as adrenaline, thyroxin and other principles of internal secreting glands; and through a close observance of the secretions of the alimentary tract such as saliva, pancreatic and duodenal juices, and such like; and through the finding of many living components of various parts of the body, wonderfully potent implements have been placed in the hands of the practising physician of to-day for the maintenance of the public health and the control of the normal functioning of the human body. So cognizant of the great help thus secured has the medical world become that the medical faculties of all the leading seats of training for doctors, and officials of public health generally, are alloting more and more time in their curricula to the training of their students in chemistry and its application to life. It has recently been authoratively stated that fifty per cent. of the medical diagnoses of the present day are faulty and that this could be enormously improved if all medical practitioners and hospitals could and would avail themselves of modern biochemical knowledge and diagnostic equipment. Or it could be completely rectified if a full knowledge were had of the chemistry and physics of the human body.

Although but the fringe of the nature of the chemistry of life has as yet been revealed, still what has been gained gives hope of a very bright future, both in the plant and animal field. When one considers that practically all that we now know has been accumulated since the time of Lavoisier and Scheele, no one would dare foretell what the next one hundred and fifty years will bring forth. For, as time goes on, the impetus of research and investigation rapidly gains headway. It was only in 1897 that the first indication of the existence in plants of those growths and other physiological factors which we now call vitamins was first indicated, and it was not till 1906 that they were practically proven to exist, and in 1911 named. But now in 1923 we have three well-defined members of the group and fair indication of the existence of two others; and what is more, it takes quite a large library to contain all the information that has accumulated regarding them. And diseases which baffled clinicians for years and were thought to be due to unsanitary surroundings, overcrowding, heredity, infection and uncleanliness (beri-beri, scurvy, keratomalacia, stunted growth, etc.) are now properly accounted for. Just recently has the composition of chlorophyll, the photosynthetic pigment of green plants, been cleared up and another important function of magnesium in plant growth elucidated; and still later (1921) was it shown what is the exact part played by this body in the nutrition of plants and the elaboration of their constituents.

It is impossible to detail further what

biochemistry has done or indicate what it will do. And neither is it necessary, for all we wish to do at this time is to convey some idea as to what the subject comprehends and the part it plays and is likely to play in the life and economy of man. The field is still young and the opportunities large and promising. Any one interested will find a copious literature, one that would require many years to master and correlate; and if he then felt so inclined, could find ample latitude for further explorations and discoveries.

Scarifying Sweet Clover Seed

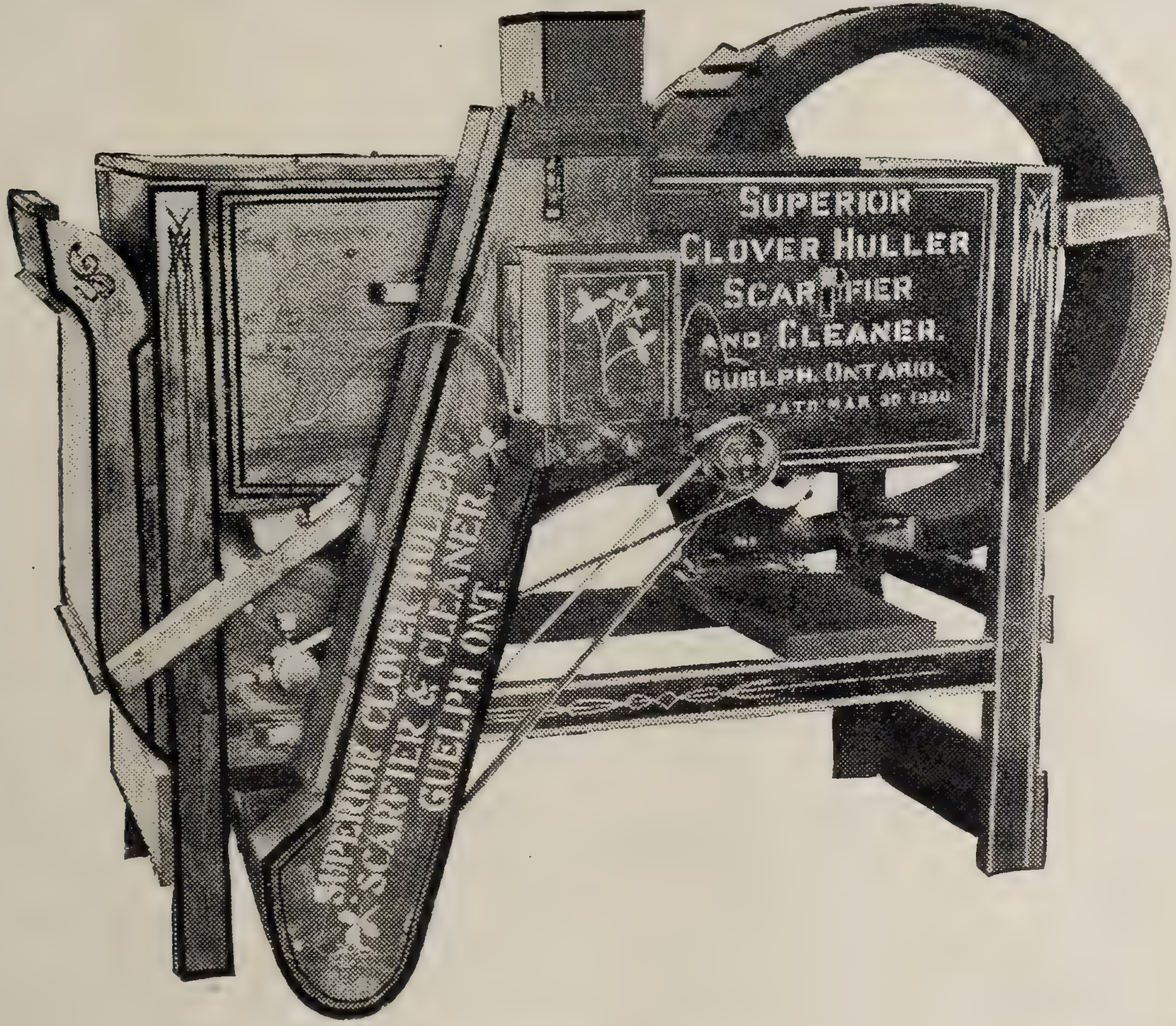
SWEET CLOVER is a crop which has been much discussed and talked of during recent years. It is a crop over which a tremendous amount of speculation, advertising and absurd claims have been made. However, at the present time a saner view with regard to this crop is being developed. It is quite generally considered that if sweet clover is to find a place in Ontario or Canadian agriculture it is not through the unsound claims of a few men who have seed to sell, but through the merits of the crop when grown on the average farm. There is undoubtedly a place in Canadian agriculture for this crop, but it is not a panacea for all farm problems, nor will it cure all feeding difficulties.

It is not the purpose of this article to discuss the merits and faults of the sweet clover plant. However, it is grown in fairly large quantities in this Province and will continue to hold a place in our agricultural life as a pasture crop, soil renovator and probably to a limited extent as a silage crop. One of the chief objections to sweet clover is that considerable trouble is experienced with it in subsequent grain crops grown on fields which have been seeded to it. This is undesirable, as the sweet clover crowds out the grain and causes unsightly looking fields. It has been thought that getting all the seeds to grow during the season sown, would help overcome this difficulty. To do this a process known as scarifying has been evolved and the remainder of this article is devoted to a discussion of the value of scarifying and the effect on the germination of the seed.

Sweet Clover seed is characterized by having a very high percentage of seeds which are covered with a hard seed coat impermeable to water. This seed may live in the soil for several seasons without germinating, but once the seed coat is cracked or broken, through the influence of frost or heat, and the water allowed to permeate, the seed will germinate and grow. This peculiar characteristic of the seed causes considerable difficulty with sweet clover in subsequent crops. In the scarifying process an attempt is made to break the seed coat by some mechanical means prior to sowing the seed, thus ensuring a large germination and less difficulty with the crop later.

There are several machines used to perform the scarifying operation. Chief among these is the large clover huller, which is manufactured primarily for the threshing of red clover and alfalfa, but will thresh, hull and scarify sweet clover seed fairly satisfactorily. The clover huller and scarifier, a small machine manufactured especially for the hulling and scarifying of sweet clover seed, has given excellent satisfaction. To a limited degree the small grain grinder is used to remove the hull and incidently scarify a portion of the seed.

Most satisfactory results are obtained with the clover huller, when the seed is previously threshed with the grain thresher, using the huller only to hull and scarify the seed. Considerable difficulty is experienced with the sweet clover straw choking the machine when it is threshed in the huller With the small clover huller and scarifier and with the grain grinder, it is necessary to first thresh the crop and then run the seed through the other machines to remove the hull and break the impermeable seed coat.



Clover Huller and Scarifier

With regard to the relative merits of these various methods of scarifying, the following figures will be of interest. Seed was collected from sweet clover plants and samples of the seed were taken from seed that had passed through the different machines. The germination of the various samples was as follows:

Germination of the unhulled seed	10.2%
Germination of seed from grain grinder	62.6%
Germination of seed from clover huller	72.0%
Germination of seed from clover scarifier	82.0%

While there is a difference in the seed from the various machines, the most outstanding point in the above table is the great increase in the germination of the seed after it is hulled and scarified. The machine manufactured especially for the hulling and scarifying of the seed gave the highest germination in the above test.

At the Ontario Agricultural College elaborate tests have been conducted by the Field Husbandry Department on the germination of sweet clover seed. As recorded in Bulletin 283, the average results of one test show a germination of 23% for unhulled seed against 90% for the same seed when scarified. A later test showed the same results as illustrated above, although the difference was not so marked. In this case the unhulled germinated 30%, while the hulled gave a germination of 71%.

While the figures vary considerably, yet they all show a decided advantage in favour of hulled and scarified seed. By improving the germination of the seed a more even stand of strong plants is insured. There is less danger of patchiness in the seeding and the crop will be thicker, giving a fineness to the stalk, highly desired in sweet clover. Along with this all the seeds germinating in one year will materially overcome the difficulty experienced with the plants in subsequent crops. Hulling and scarifying are two important and essential operations in the production of high class sweet clover seed.

Appetite

By Prof. W. R. Graham, B. S. A.

THE art of feeding is still a very important consideration in getting results from animals. The science of breeding and of feeding are important, but it takes a real feeder to get the best possible results.

At times, one hears of somebody who has had a flock of hens that laid exceptionally well, and it is not uncommon for one to hear it said that so-and-so "fusses" with the hens. The question is, what is meant by "fussing." Does it simply mean constant attention, or does it mean a study of the birds' appetites, as influenced by careful feeding as to quantity and variety?

A common experience of the beginner who has read the literature on poultry is that he or she can start the pullets laying easily, but in the course of two or three months, the production falls seriously, and many consider this a normal result: but to the one who desires to do the best possible, the question is why?

Careful observations, plus a few accurate weighings, show that production is generally well maintained if the body weight does not go down; in fact, with pullets there should be a gradual increase in weight throughout the winter. When the body weight decreases, it is almost a positive indication that production will go down fairly soon. One of the problems, therefore, is how to maintain the body weight. This is not so easily accomplished as it might be supposed. There is still another rather interesting fact in that when the egg production is increasing, usually the percentage of hatchable eggs increases or is well maintained, and when the production decreases the percentage of hatchable eggs also decreases very rapidly. For some reason or other, the body is not properly nourished.

Birds laying heavily have good appetites and full crops. Suddenly they lose their appetites, commonly from being overfed, or does the loss of appetite result from an insufficient variety of feeds, or some such condition? That is, do the birds tire of the same old feeds, even if they do contain a considerable number of kinds of feeds? What is the root of the trouble? Is it simply that the feeder was unfortunate enough to misjudge the amount of feed the birds would eat, or have the feeds lacked some essential material in the ration given?

The common method of bringing the birds back into condition is to cut down on the amount of feed and to add more variety to the ration. Simply get them to eat plenty. Get the result, no matter how it is done.

There is a real problem for some student to work on the relation of quantity and variety as they influence the appetite. One would naturally expect increased production to increase the feed consumption and it does, only the appetite suddenly decreases and the production fails.

A few thoughts on nutrition suggest another cause of lack of appetite, even with the supposed balanced ration. The feeder who is a "fusser" uses the greatest possible variety and probably uses both expert art and science.

Are You a Fusser?

When you know a thing, to hold that you know it; and when you do not know a thing, to allow that you do not know it, this is knowledge.—*Confucius.*

Men sometimes speak as if the study of the classics would at length make way for more modern and practical studies, but the adventurous student will always study classics in whatever language they may be written, and however ancient they may be. For what are the classics but the noblest recorded thoughts of man?—

Thoreau—"Walden".

MARCH

Ah, passing few are they who speak,
Wild stormy month, in praise of thee:
Yet, though thy winds are loud and bleak,
Thou art a welcome month to me.

For thou to northern lands again,
The glad and glorious sun doth bring,
And thou hast joined the gentle train
And wear'st the gentle name of Spring.

—*Bryant.*

THE OAC REVIEW
ODELL

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EDITORIAL:

Just Editorial

IN THE past month the student body has been conducting itself in such an exemplary manner that the editorial department is almost at a loss for burning questions to hold forth on. That the term has been successful from a college life point of view we are all ready to admit. That it will be as pleasing from a purely academic outlook is not for us to say. Spring is on the way and with it comes that annual and unescapable malady of examinitis. The first symptoms are already visible to the practised eye. Even ye editor is beginning to feel faint and unable to cope with the stack of undigested information which must be assimilated before the month is over. However, it has been done before and there are yet nearly thirty long days ahead. Why that is over seven hundred hours; or forty-two thousand minutes! No need to worry. One can accomplish wonders in that time.

We had intended studying faithfully all term, we always do,—but there are so many things which must be supported if college life is to be kept interesting and enjoyable. And a goodly part of our education is found outside of the class room. Still, it is apparently necessary to pass those exams, and so to it.

As the term draws to a close we become more and more expert in the ways and means of finance—another important phase of education. We don't toss for chocolate bars and ice-cream as often as before. Every cent counts during March and April. In fact most of us get badly bent and have to manoeuvre dexterously to navigate safely. There may be enough returned from our contingency fee to supply a ticket home but that is not a dependable source of revenue.

In this connection we are reprinting from the Youth's Companion the expense account of a young man who left his home in Waltham, Massachusetts in 1751 for college. Some items, which are easily recognizable, would scarcely enter into our accounts. Yet if the purchasing power of money was treble then what it is to-day we are not overly extravagant.

We quote:

> The young man made out a list of things needful for his journey; among them were butter at eight and one-third cents a pound and tea at four dollars a pound. Stopping at Newport, he supplied himself with a penknife, a corkscrew and a buckle brush. After he had spent eighteen and three-fourths cents in New York he hurried on to Newark. Among the new clothing that seemed essential was a cocked hat of imperishable felt with an embroidered silk button upon the front of it.
>
> After twelve months at college the young student bought a horse upon which to ride home; he had sent his baggage by sea. He was on the road for four days, and though he stopped to rest each night his notebook shows an expense account of less than five dollars for the trip. Here are his college bills for the whole year:

Clothing	$ 43 00
College bills, board at 80 and ¾ cents a week	42 00
Amusements	6 00
College bills proper	20 00
Rum	3 00
Cider	8 00
Traveling expenses	12 00
Fuel, hickory wood at $1.62 a cord, candles, barber and other sundries	11 00
	$145 00

We wonder, did he tone up the cider with the rum or cheer himself up with the rum after becoming sorrowed on drinking the cider?

The Mail Box

Editor's Note—This month we are publishing two letters, which should interest all O. A. C. men. The first, "The O. A. C. and The Farmer," is written by a practical farmer, who sees the college from the standpoint of the man on the land. The second, "Pertinent Questions," is written by an undergraduate. We refrain from making any comment on either in order that our readers may have the opportunity of thinking about and discussing the problems and questions suggested. If you have any solutions, let us hear from you. What method should be inaugurated to bring the farmer and the college closer together? How should timely news be sent to the farmer? Should an O. A. C. student be a encyclopedia of facts, ready to answer the million and one questions which could be asked of him?

The O. A. C. and the Farmer

EDITOR, THE REVIEW:

Generally speaking, the farmer's attitude towards the O. A. C. is favorable. You will find some absolutely indifferent, a few decidedly antagonistic, but the great majority quite appreciative of the work accomplished by that institution. Any criticism which may appear in this article is not intended as censure, for no one is infallible, but with the hope that a frank expression of opinion may result in a better understanding and a closer co-operation between the O. A. C. and the actual farmer.

At the outset we wish to acknowledge the indebtedness of the farmer to the O. A. C. and its able staff for the progress made in the various branches of farming. Without going into detail observe the general improvement of cultural methods in almost every line of farming. While in some instances it may be true that the farmer has worked out these things for himself, yet the O. A. C. blazed the trail. There are the advances made in animal husbandry, insect pest control; handling of perishable farm products; and last, but perhaps greatest of all, comes seed improvement. Viewing the matter only from a financial standpoint, it is generally conceded that what has been accomplished in seed improvement alone amply justifies the existence of the O. A. C.

However, there is a feeling throughout the country that the farmer and the O. A. C. are not in close enough touch to obtain the best results. In the first place, the District Representative, who, in most cases, is doing good work, has no longer direct connection with his Alma Mater. The men actually engaged in O. A. C. work no longer meet the farmers' organizations, to discuss their various problems as in the old Farmers' Institute days. Then, the men actually engaged in experimental and investigational work met the men on the land, and mutual difficulties and experiences were discussed. It is quite possible that the men, doing this work, have their time fully occupied, and yet it would seem that there should be some way whereby they could meet with farmer organizations, at least during the winter months.

Of the need of getting together there can be no question. For example, the reason for the serious deterioration of the red clover crop during the last few years is still only a conjecture. Another thing that seems to call for attention is the general lowering in the average yield of most farm crops.

At the present time there is practically no virgin soil under cultivation. Is it not possible that some essential plant-food element has been exhausted? Experiments to determine this would have to be conducted under local conditions, and could perhaps be best done under the supervision of the District Representative.

One reason for dissatisfaction is the seeming inability to obtain the available results of the O. A. C. Staff's work when it is seasonable. For instance, if one is lucky he may see in some obscure corner of some periodical, about the time the late spies are in bloom, that a treatise on the best methods of grafting may be obtained upon application; or about the middle of August. "Hints on How to Run the Incubator" is now available.

Could not the O. A. C. publish some official organ containing all the worthwhile results of their experimental work, that could, for a nominal subscription, be mailed periodically to those desiring it?

In conclusion, let us hope that some means may be devised whereby the great farming class and those working for them at the O. A. C., may the better labor together for agricultural improvement; not alone for the increased revenue which will accrue, but for the satisfaction of doing in the best possible way, the world's greatest and most fundamental work.

—FARMER.

Pertinent Questions

THE EDITOR, "O. A. C. REVIEW":

Last summer I was surprised to find that, though I had spent more than one year at the O. A. C., there were certain things I did not know which a student should know, some of which unfortunately are seldom if ever discussed at the college. I have been wondering since, if I was the exception, or the rule, in not knowing, offhand, the answers to some of these questions:

1. How much land can a man, team and single plough plow in a nine-hour day?
2. What width and length corner anchor-post should be used for a wire fence in light or in heavy soil?
3. Is thirty feet too much to have between the posts in a wire fence and what size should they be?
4. What is the best mixture to use in a nine-inch cement wall under a one-storied building?
5. What conditions must a chimney be in, before insurance can be obtained for the building?
6. What does ten rods look like in a straight line?
7. Do cow peas make a suitable green manure crop, if grown farther north than Guelph?
8. If a road is supposed to be sixty-six feet wide? If before erecting a new fence one finds the road only fifty-six feet wide—should the new fence be moved back ten feet, or five feet, or should one stick to the old line?
9. In digging a well where it is known the soil is a light sand to a depth of fifteen feet, should one build a round curb or a square one, and what would be the best kind of lumber to use?
10. How should one blast out stumps in sand or clay land, and where should the charge be placed?

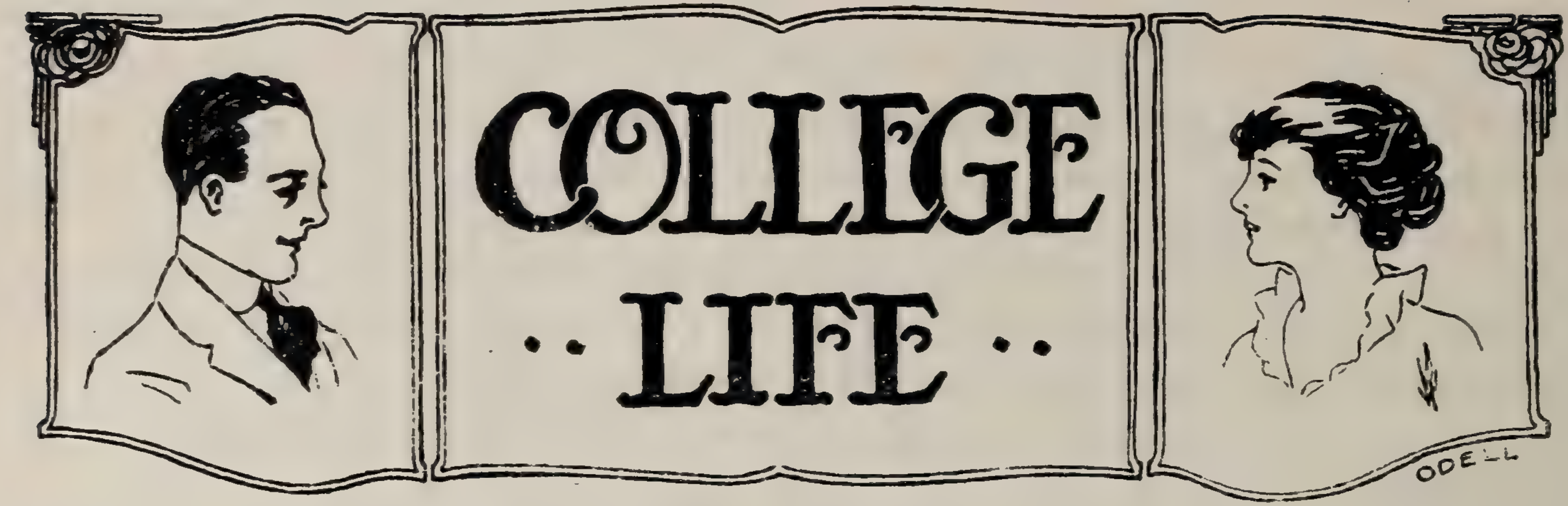
Will any of these be the problem of any of the readers of the O. A. C. REVIEW next summer?

—B. D.

Pliny, speaking of the abundant yields of corn in the early days of Rome, says: "What could be the cause of this abundance? Was it not because in those days the land was cultivated by the great generals; and the earth, as was most natural, delighting to be upturned by laurel-crowned ploughshares, and husbandmen decorated with triumphs? Or was it that such men sowed fields with as much skill and prowess as they won them, and laid out their ridges with as much judgment as they marshalled battalions?"

Though we have many substantial houses of brick and stone, the prosperity of the farmer is still measured by the degree to which the barn overshadows the house.—*Thoreau.*

Our ancestors regarded it as a grand point of husbandry not to have too much land in one farm; for they considered that more profit came by holding little and tilling it well.—*Pliny.*



COLLEGE LIFE

A Successful First Night

PHILOSOPHY was the order of the night on January 17th, when "The Philosopher of Butterliggens" and "Smith Broadens Out" were played before a crowded house in the College gymnasium.

The first is a one-act play which consists of a battle of words between an obstinate old Scotchman and his equally obstinate married daughter, much padded by the querulous philosophy of the aforesaid old gentleman. Unfortunately the humour is sadly camouflaged by Scotch dialect, which always seems to lose in lucidity what it gains in picturesqueness. Mr. J. M. McCallum made the best of a difficult part. His dialect was natural and his complaining senility followed by glee at gaining his point were excellently done. There was not much to choose between Mac and Master Blackwood when it came to "greetin' ", but it was really Mac who won the day and brought sympathetic howls from the basement, where the dean was vainly attempting to soothe the Fourth Year Mascot.

Mrs. Page, who bore the brunt of this combined attack on the part of first and second childhood, had our sympathy and admiration. Her acting was genuine, and though we were glad to see the man get his own way for once, it came as a great surprise. Stan Joss was admirably fitted for his part as harassed onlooker and provided the biggest laugh of the evening. However, for art's sake, we think he should have clung more tenaciously to the rather thin disguise he was carrying.

After all the fuss we should have liked to have heard Mac tell wee Alexander that story.

But it is the philosophy of Smith in the second play which we remember best. "Here on the back concessions of old Ontario . . . . . . is a society in which the capitalist, the manager, and the laborer are reconciled and merged into one man—the farmer."

Had we not known we should have guessed, long before Smith had finished broadening out, that the author was Mr. H. C. Mason. His play is a forceful criticism of "frenzied Ninevehs". It is a plea for the dignity and beauty of life on the farm woven into a story which contains a fruitful vein of quiet humour and the necessary modicum of romance. There is even a touch of the dramatic in the entrance—and exit—of Sharkey, the villain

Upon Smith, the puzzle-headed hero, who finds solace for his inability to reform the world in a hundred acres of good Ontario soil, devolves the heavy share of the acting. Right at the start he is thrust into the limelight by a two-tined fork, and from then on he is not long out of it. But Moff Cockburn sustained his part well, though we suspect that towards the end he began to look forward to that reward which is generally provided for heroes. However he deserved it. His interpretation of the meditative young man with the unhappy faculty of always seeing both sides was hard to criticise. We were only disappointed he did not lay that Sharkey fellow in the dust.

Mary, as played by Miss Newitt, was a good excuse for any man settling down on a farm. Neither flapper nor Prim Priscilla, she was the most unquenchable argument in the whole play. Did you notice how she brightened up that old feed room? We cannot blame Smith—on the contrary, Old Muddlehead!

Perhaps none of the cast was more at home than McKellar McArthur. As a shrewd but kindly farmer, level-headed and deliberate, and no stranger to the fork, McK. McA. excelled. Again we would have appreciated a little more dispatch in showing Sharkey off the place—but perhaps he was wise in his self-restraint.

Most of the humor of the more obvious kind was supplied by Tarpin in the person of Gus Edwards. His entries were always greeted by laughter and he certainly looked the part of an ex-Sergeant-Major, much given to bellowing, and nursing a chronic grudge against prohibition. One could not help feeling that a good deal of really unparliamentary language was bottled up in that "Confound it, sir!"—especially as he expounded on the "old manly virtues persecuted to death by pussy-footers". A little more of the self-assertive military carriage, together with a less sporty pair of hose, might have made him more convincing, but he was undoubtedly funny, and we should have enjoyed seeing him in the presence of his much better half.

As for Norm Blaney, we need only quote a junior normal—presumably normal—lady, who heralded his appearance with, "What an adorable villain!" It will be difficult to trust him again—he's a born villain of the smooth insouciant type—not exactly an orthodox "red" agent but a good contrast to the rest of the characters in the play.

"Smith Broadens Out" is essentially a play for country audiences—it is so true to farm life in every detail, so free from the commonplace stage types and contains many touches that would mean little to those uninitiated into the mysteries of pitchfork and pedigree. In addition, the scenery is very simple and the number of characters small. It should lend itself very well to production by mail communities.

Mr. Mason, Mr. Ruhnke and Mr. Williams, as well as all the cast, are to be congratulated on a first night that was an unqualified success.

A Cambridge Lecturer

After hearing Professor C. R. Fay during the Markets Conference, we were glad to see that the Economics Club had asked him to speak on "The Place of Economics on the Curriculum." On February 15th Massey Hall was well filled—even a number of ladies from the Home Economics side were there to prove that their outlook is by no means confined to the domestic hearth and that "society" is a word deserving a bigger definition than that generally credited to it on the ladies' page of the local newspaper. A sign of the times? Possibly.

Prof. Fay, who has come from Cambridge to lecture at Toronto for a time is a speaker one does not forget. He is the kind of lecturer who would not need to call the roll. He beguiles you into seeing his point and, though he makes you laugh, his jokes are always relevant. When he mentioned the tutorial method of study at Cambridge we wished that we had him to "smoke at us," as Stephen Leacock puts it.

"We measure our success," said this Cambridge Professor, "largely by the amount of bewilderment into which we are able to cast our students. You know, there is the kind of student—and I can't help liking him, he's such a nice fellow—who never has any difficulties. He takes down every word the lecturer says—some of the ladies even take down the jokes and give them back at exams.—and he picks up all the externals and is satisfied. But their meaning slides off him as off ice. He gets through—he's such a nice chap you haven't the heart to pluck him—but you know," and here the Professor's voice was sad with the experience of years, "you know, for that man there is no hope, either in this world or the next."

Why do we study Economics? The answer was given at the recent Markets Conference. Agriculture is the one industry which has turned its attention to improving methods of production and neglected its problems of distribution. Economics should take a more important place on our curriculum. But we should remember the advice of Professor Fay if we are to study Economics. "Do not confine yourself too narrowly to your own particular sectional problem." Economic questions are mostly world questions and they are questions which demand not only a technical knowledge of the industries concerned but a knowledge of psychology and a knowledge of history. Applications of theory must be founded on the lessons of history.

The Modern Marriage of Convenience

The presentation of "The Modern Marriage of Convenience" provided as pleasant an evening's entertainment as has ever been witnessed at the O. A. C. The play was frankly produced for the sole purpose of entertainment—and the achievement of that end was very evident from the enthusiasm displayed by the large audience that filled the Gym. From curtain to curtain there was not a dull moment.

The acting was so uniformly well done that the bouquets should be presented all around. Miss Southcott as "Jane" as completely captivated everyone as she did that other "faithful soul," William.

Mr. Kezar, who took the part of William Tipson, deserves great credit for his remarkably able interpretation of the perplexed butler. One certainly must agree with him that things were getting "too thick" for "flesh and blood" to stand.

"Mrs. Chadwick," played by Miss Fitzgerald, provided some of the most capable acting of the evening, filling a difficult role with admirable success. However, we found it necessary to stretch our imagination to a very, very great extent to recognize an elderly widow in Lucy's Aunt.

Doug. Edmonds, as the prodigal Charley Shackleton, was the subject of much favorable comment. His agility in explaining away the various tight situations, resulting from the "zeal" of poor William, was only equalled by that of Jane. We were a trifle disappointed when William broke down and exposed the plot, but there's a limit to everything. As Mr. Kershaw remarks, Charlie had "explained a good many things" for one day.

The kind-hearted Mr. Kershaw, "the cause of it all," who was impersonated by H. E. Macdonald, will not soon be forgotten by those who witnessed the play. He was such a nice old gentleman. Though his paternal interest in Charlie involved that young man in many difficulties, it was certainly not his fault. Might we be allowed to suggest that Mr. Macdonald's voice was a little light for that of an elderly gentleman, wearing sideburns.

We must not forget the gentle Lucy. She furnished us with another example of true love travelling a rocky road. It was a decided surprise, when she said in the last act, "Oh, Charlie! I am so unhappy. I couldn't stop away from you!" Miss Elizabeth Scott as Charlie's fiancee showed ability rare in an amateur.

Mrs. Pixton (nee Doris Cowan), the irate mother of the "little offspring," brought the house down, while Jim Short, appearing as the meek Mr. Pixton, with that bowler hat and red bow created a furore. Mention also must be made of that inquisitive rogue, the irrepressible Claude (A. McGougan).

Any compliments that might be offered the producers on the success of the play would be entirely superfluous, as the best recognition of their work they could possibly be shown was expressed in the reception it was accorded.

However, honour must be given where it is due, and without a doubt the honors of the evening go to Mr. M. J. Williams, whose skillful direction was in a large measure responsible for the finish shown in the production. Nor must we neglect to mention Jerry Ruhnke, Moff Cockburn, G. D. Lewis, A. J. Kirstine, G. F. Jackson and Bill Paterson, all of whom contributed greatly to the success achieved.

The Freshmen's Skating Party

On Friday, February 9th, Year '26 contributed its share towards the social life of the college, when the Freshmen's Skating Party was held in the College Arena.

The programme was divided into eight bands of skating and eight bands of dancing. The ice was perfect and skating was finished before the skaters could realize it. Followed an adjournment to the waiting room, where the refreshments were enjoyed by the hungry merry-makers. Once the moccasin dancing commenced, the time sped by on wingéd feet and many echoed the sentiments of the poet who wrote:

"Backward, turn backward, oh time,
in thy flight."

The rink was decorated with cedar trees and the much-used moons were of good old red and blue. In the waiting room, cedar boughs and red and blue streamers effected a transformation. In short, 'twas an enjoyable party—one of the most successful ever staged by a Freshman Year.

Delphic Literary Society

"A howling success," voted each and every member of the Delphic Lit. after the first meeting of the year in the Students' Parlor of the Old Residence, on January 30th. Successful—because of the large and appreciative audience; "howling"—because—well, because howling is the only word in the English language which fittingly describes the gusts of laughter which greeted each number on the programme.

The opening speeches on "College Spirit and Year Spirit," by Mr. McConkey, Mr. Lemieux and Mr. Hamilton, were full of sound advice. Then the judging of the new breed of cattle by Mr. Wharry delighted the gathering. After a period of relaxation with cards and dancing, the audience was regaled by impromptu speeches by members of the Society. A great variety was exhibited in the subjects of the speeches, which included such interesting topics as "Why I Became a Parson," by Hunt; "Darwin's Theory," by Raikes; "Prosperity Follows the Dairy Cow," by Wally; "How I Courted My Wife," by Cruikshank; "Cows' Hair in Mortar," by Wilkes. Variety being the spice of life evidently had influenced the committee in their selection of subjects. The appreciation of the audience was expressed in no uncertain way before the meeting dispersed.

O. A. C. Outdoor Club

Upon a suggestion from Dr. Ross, of "Mac" Institute, Mr. K. Forman called a meeting in Mac Hall Library, of all those interested in Outdoor Sports. About fifteen were present, and they appointed a committee to organize a Club. A trial party was held on February 5th, consisting of tobogganing on the Hill, "eats" and a dance in the Institute. The sixty who were present voted the evening a success. Encouraged by this the Committee decided to organize an Outdoor Club. Mr. Stan Smith is convener with a committee of three ladies from the Hall, and year representatives from the College. Expenses for all parties are to be as low as possible. This Club fills a much needed work around the College. More parties are to follow. "Get out and keep healthy."

Going Up.

MACDONALD

Around the Hall

THE Macdonald Hall Literary Society held their January meeting on the evening of January, the twenty-ninth, in the sitting room.

The programme was put on by the Homemakers, and although short, was both interesting and instructive.

A carefully planned outline of the current events for the month was prepared by Miss Tomkins and read by Miss Schell. Miss McLaughlin favored us with a violin solo. Miss McCague showed great charm and talent in several recitations, which were very pleasing. An interesting book review on "The Freedom," by A. S. M. Hutchinson, was prepared by Miss Simpson, and read by Miss Cunningham. A vocal solo by Miss Tunks was very much appreciated.

We were sorry that our President, Miss Armour, was prevented from being with us on account of illness. Miss Maxwell occupied the chair.

The Senior Normals entertained the Junior Normals and the Faculty at a High Tea on Tuesday, January 30th. Miss Morse, Miss Chown and Miss Shearer received. The tea was held in the drawing room, which was made cheery by a grate fire. Excellent refreshments were served and everyone enjoyed a pleasant afternoon.

Impressions

That alcove in the cafeteria—
Such a cozy little place. Ah!
The easy chairs. Yes, and the pictures,
This one on the left—Autumn—Pretty!
You say—but more than that.
The blue, blue
Water reflecting th' October sky.
You don't see it. Those red leaves and the slightly
Swaying trees, moved by the frost-tipped breeze,
The very spirit of Autumn. One day
More and the gales will carry away the brown
Skeletons of the bright foliage on the hill,
One can almost hear the blue-jay scream,
And the honk honk of the ducks south-bound.
So well the artist caught the spirit of it.
What do I see in the other one:
A drowsy summer day when every living
Creature seeks the grateful shade of tree
And rock. Those heavy white clouds behind the
Hill? Do they not foretell the heat
Lightening, the distant rumble of thunder that
Brings no rain. And everything choking for water.
The grey line of shore around the lake—
That shows how low it is. This is good coffee.
You like the place, that's good. Let's come again.

—A. R.

The Short Course girls were duly initiated in January.

The blind-folded procession wended its eventful way through a maze of corridors to the Gym., where a wonderful impromptu entertainment was given before a large audience. The girls showed a very fine spirit and we are certainly proud of them.

Three Cheers for the Short Course!

You have a poet in your class,
Perhaps a jester too;
Jot down a few things ere they pass:
We want them for "Review."

Nevah!

M. R. (answering the Mac Hall telephone and not knowing the girl who was being asked for): "Is she a Short Course girl?"

Unknown Voice—"Well, short and dark, but not coarse."

At the Well

Once upon a night made cheery
By some dancers, never weary
Of this gentle art,
Who were waiting all expectant
For the arrival of knights-errant,
At the staircase landing,
Silent all were standing,
Cheeks and eyes and dresses radiant,
Looking quite the part.

Doorbell rings, and in comes Willy,
Walks into the front hall chilly,
Of the great Mac Hall,
Stands beneath the well unthinking,
Till he gazes up unblinking,—
Sees a hundred eyes—
Puts poor Willy wise;
Self-possession feigned and sinking,
Steps back to the wall.

Alumnae

Marg. Blair, '22, is taking her pupil work at Green Point.

Jean Craig, '22, is assistant dietitian at Green Point.

Marg. Mallot, '22, is assistant dietitian at Geneva City Hospital, Geneva, N. Y.

Some Mac graduates at the Conversat were: Marjorie Borland, Kay Beck, Marguerite Smith, Mayme L. Almas, E. Nickol, W. Lobsinger, Florence Baker and Kay Hobbs.

Winnipeg Alumnae Branch

The inaugural meeting of the Winnipeg and Manitoba Branch of the Macdonald Institute Graduates Association was held at the Purple Parrot tea-room, Friday, November 24th.

The members present were: Mrs. Bowes (Olive Murray) '16, Miss Helen Davidson '14 and O. A. C., Miss Kathleen Dowler '15, Miss Lena Grothie '15, Mrs. T. L. Guild (Miss Mary Kelso) '15, Miss Mary C. Hiltz '14, Miss Florence Irwin '14, Miss Evelyn MacLean '19, Miss McLeay '21, Miss Mary Moxon '16, Miss Helen O'Flynn '17, Miss Lenore Panton '15, Mrs. D. B. Shutt (Miss Greta Crowe) '13, Miss Bertha Schofield '19, Mrs. H. A. Tubby (Miss Jane Salkeld) '07. These members included seven graduates of the two-year normal class, one two-in-one, one homemaker (who had one year at the O. A. C. as well), one short course, one associate, three institutional management.

The officers elected were: Mrs. T. L. Guild, President; Mrs. D. B. Shutt, Secretary-Treasurer. It was decided to meet four times a year, or whenever occasion demanded. It was also decided to have no restriction as to membership except attendance at Macdonald Institute. The Secretary was instructed to send the greetings of the meeting to Miss Watson, Mrs. Fuller and Miss Cruikshank.

ATHLETICS

Inter-faculty Assault-at-Arms

BOY, give me a gallon of ahs-cream!"

Joe expressed the sentiments of all the healthy, though lean and hungry members of the Boxing and Wrestling Team after being weighed in at Hart House on February 9th. The weeks of training and careful eating were so nearly over that only the thoughts of the coming bouts held in check the boisterous and clamouring appetites.

Of the fifteen men who made up the team only three were successful in the finals on Saturday evening. In the preliminaries our boxers fought gamely but were out-pointed by their opponents. Although seven wrestlers were defeated, it is significant that only one O. A. C. man was thrown. That they lost was due to the fact that the decision was given to the man on top the longest in the first six minutes. We cast no reflection on the winners when we say that they took full advantage of this ruling, contenting themselves with holding their men down, without attempting to secure a fall.

In the finals the most outstanding bouts of the entire evening were staged by Marston and by Stewart. "The Settler" won by his usual aggressive and clever style of wrestling. Stewart, although this was his first appearance in the ring, handled his man with the ease of an old-timer. Moran and Inch were matched against each other. Their bout was bloodless—the flip of a coin gave the decision to Inch. Four O. A. C. men, Eddy, Kelley and McArthur in the wrestling, and Miller in the boxing, worked strenuously in the finals but were defeated.

The Inter-Faculty Trophy, the Davidson Cup, was won by the Dental College with five wins. O. A. C. and S. P. S., with three wins each, tied for second place. Many of our men were newcomers to the ring. Another year with more experience and training we hope to repeat the success of last year.

Credit is due Jack Chisholm, manager of the team, and to S. O. Hillerud, who gave unsparingly of his time rubbing down after the bouts.

PRELIMINARIES

BOXING—

135-Lb.—Seabourne (S. P. S.) defeated Vignale (O. A. C.).
135-Lb.—Toye (S. P. S.) defeated Cross (O. A. C.)

WRESTLING—

135-Lb.—H. P. Adams (Dents.) defeated Senn (O. A. C.).
145-Lb.—E. H. Marston (O. A. C.) defeated Farnsworth (Meds.).

SEMI-FINALS

BOXING—

110-Lb.—Rutman (Vic.) defeated Cox (O. A. C.).
145-Lb.—Martin (S. M.) defeated Lewis (O. A. C.), who took sick in the second round.

WRESTLING—

118-Lb.—Kelley (O. A. C.) defeated Lindgen (Meds.).
125-Lb.—McArthur (O. A. C.) defeated Turnbull (S. P. S.).
125-Lb.—Lucas (Dents.) defeated Speers (O. A. C.).
135-Lb.—Parson (Forestry) defeated Allman (O. A. C.).
145-Lb.—Marston (O. A. C.) defeated Murray (S. P. S.).
145-Lb.—Torrance (Meds.) defeated Ure (O. A. C.).
158-Lb.—Moran (O. A. C.) defeated Boyle (S. P. S.).
158-Lb.—Inch (O. A. C.) defeated Griffin (St. Mikes).

FINALS

BOXING—

158-Lb.—Moyer (Dents.) defeated Miller (O. A. C.).

WRESTLING—

110-Lb.—Keyfetz (Dents.) defeated Eddy (O. A. C.).
118-Lb.—McPhee (Dents.) defeated Kelley (O. A. C.).
125-Lb.—Lucas (Dents.) defeated McArthur (O. A. C.).
145-Lb.—Marston (O. A. C.) defeated Torrance (Meds.).
158-Lb.—Moran (O. A. C.) conceded to Inch (O. A. C.)
175-Lb.—Stewart (O. A. C.) defeated Jeckell (S. P. S.).

Our Champion Wrestler

On Saturday, January 27th, Scotty McMillan and Frank Moran took part in a boxing and wrestling tournament at the United States Military School West Point, being members of a team from Toronto University. Scotty was against a man who was hard to beat, and though the first two rounds showed little difference between the two, in the last round McMillan was outclassed. Moran exhibited his old form and maintained his record of an undefeated 158-Lb. wrestler. After leaving West Point he won a fine gold medal for winning a bout at the New York A. C.

Everybody at the college was highly pleased to have the O. A. C. make such a good showing in Uncle Sam's country and Frank's career as a wrestler will be watched by his many friends with expectations of his representing Canada at the Olympic games in Paris, 1924.

Hockey

Intermediate Intercollegiate

VARSITY II., 3—O. A. C. I., 1

The college rink was the scene of a real hockey game, January 29th, between Varsity II. and O. A. C. The college team put up a good brand of hockey, but Varsity's three-man combination was too much for our defense, especially in the third period. Also our fellows failed to back-check sufficiently, in which the Varsity players were particularly strong.

In the first period O. A. C. got the only goal while in the second Varsity evened the score. The third period the college team was outplayed, and

Varsity added two goals to their score, making the final score 3-1 in favor of Varsity.

O. A. C. line-up: Goal, D. M. Beattie; defense, Nichol, Paterson; wings, G. Cameron, Scott; centre, Shoemaker; subs, Henry, Dawson.

VARSITY II.,3—O. A. C. I., 0.

On Monday, February 12, the O. A. C. I. battled with Varsity II. in the Arena, Toronto, in the second of their home and home games, and suffered a 3-0 defeat. The score hardly indicates the play, however, as the O. A. C. boys had equally as much of the play, particularly in the second period. Evans—the star centre man for Varsity—was particularly effective around the O. A. C. net and was responsible for two of the goals. Beattie for the College played exceptionally well in goal, while Henry and Shoemaker and Scott combined well on the forward line.

O. A. C. First Hockey Team
BACK ROW—Dawson, Paterson, Nichol, "Caesar" Smith, (coach), Henry, Beattie, Roxborough (Assistant Manager).
FRONT ROW—Scott, Shoemaker, Cameron, Richardson.

The line-up—O. A. C.: Goal, Beattie; defense, Paterson and Nichol; centre, Cameron; left wing, Henry; right wing, Scott; subs, Shoemaker and Richardson.

Exhibition

VARSITY JUNIORS, 4—O. A. C. I., 3

A good number of rooters turned out on Monday night, January 22nd, and saw Varsity Juniors defeat O. A. C. by the narrow margin of one goal. Varsity did not win without putting out the best they had, while the college team fought hard and gamely every minute of the play. There were many exciting plays on both sides, but Beattie in goal for O. A. C. furnished the greatest number of thrills by repeatedly turning aside shot after shot that looked like sure goals. Somerville for Varsity was one of the fastest men on the ice and played a fine game, while Cameron and Paterson showed up extra well for O. A. C.

In the first period, after nearly fifteen minutes of play, the college netted their first goal. It ended the scoring for that period. In the second Varsity got two goals fairly easily, owing to college not covering their men. The last period furnished some fine hockey. Varsity made it three but the college came back with one soon after. Then the visitors got a goal after some hard work, which was followed by another for the college a few minutes before the final whistle.

O. A. C. line-up: Goal, D. M. Beattie; defense, Paterson, Nichol; wings, Scott, Dawson; centre, G. Cameron; subs, Shoemaker, Henry.

Jennings Cup

O. A. C. II., 5—College of Education, 3

Thursday, February 15th, found the second team in a skirmish with the Faculty of Education, in the first of home and home games in the semi-finals of the Inter-faculty hockey series. For the first period the college team seemed to be slightly lost and entered the second spasm one goal down. In the second frame, however, they commenced an organized attack on their opponents' goal and quickly ran in four while the C. of E. scored once. In the final period Varsity inclined to wood-chopping exercises, but it got them little for the final bell sounded with the score 5-3 in O. A. C.'s favour.

Shoemaker, Donaldson and Page were the best for the college, while Doolittle showed up well at centre for the C. of E.

The line-up—O. A. C. II.: Goal, Rundle; defense, Page and Pridham; centre, Shoemaker; left wing, Donaldson; right wing, Richardson; subs, Pallesen and Dawson.

O. C. E., 3—O. A. C. II., 1

At Varsity Stadium, on February 17, the College Seconds lost the return game to O. C. E., 3-1. Accustomed to fast ice the college players were badly handicapped, owing to the rough condition of the rink. Pallesen, playing good hockey, scored the first goal on a hard shot from outside. Page and Zacharay (O. V. C.) coupled up well on the defense. Although this game evened the score on the round, the interfaculty authorities gave College of Education the series, as they had protested the elegibility of Shoemaker in the previous game.

Line-up for O. A. C.: Defense, Page, Zacharay; centre, Pridham; right wing, Donaldson; left wing, Pallesen; sub, Stan Smith.

City League

O. A. C., 2—Taylor-Forbes, 1

In the second game of hockey for the O. A. C. team in the City League, January 27th, the farmers took the measure of the Taylor-Forbes team, 2-1, but not until after ten minutes overtime had been played. The game was fast throughout and though a little rough, it added to the excitement.

O. A. C. did not get nearly as many shots on goal as their opponents, but due to Beattie's star work the score was kept down. In the first period, due to quick work by Cameron and Scott, O. A. C. got the first goal. The score was evened in the second period, while neither team was able to net one in the last. After nearly ten minutes overtime, when Beattie made a very spectacular stop, Cameron got the puck and after a beautiful rush and fine shot netted the winning goal for the College, followed by a great outburst of cheering from the students.

O. A. C. line-up: Goal, D. M. Beattie; defense, Nichol, G. R. Paterson; wings, Cameron, Scott; centre, Shoemaker; spares, Dawson, Henry.

ELORA, 0—O. A. C., 5.

The Elora hockey team met the O. A. C. sextette in their first game of hockey at the new Arena, February 1st. The Aggies found the Elora team easy prey, especially as Elora was without their star goal tender and two of their regular forwards.

The ice was rather sticky and the game was one of the slowest of the season. The college team piled up a total of five goals and held their opponents scoreless. Paterson scored three of the goals, going the full length of the ice each time and scoring from outside the defense. Scott and Henry tallied the other two. Nothing went past Beattie, who handled everything which came his way in a smooth manner. For the Elora team, McGruthers, Wilde and Brown put up the best brand of hockey.

O. A. C.—Beattie, goal; Nichol, Paterson, defence; Shoemaker, centre; Henry, Scott, wings.

O. A. C., 2—SPRING & AXLE, 1

In a very close game of hockey in the new Arena, February 6th, the college team came out victorious by a score of 2-1 against the fast Spring & Axle team.

The city team did not have any subs and, according to a city paper, three of their players did not exert themselves because of a game to take place the following night. Be that as it may, the college team won and they were without their speedy centre, Cameron.

The two teams battled through the first period without a score. In the second, each scored one goal, the Aggies getting their goal first. The last period saw some real good hockey and only five seconds before the gong sounded Paterson made a nice pass in front of their opponent's net to Henry, who shot the winning goal.

The college team worked very well in team play. Beattie in goal played a good game, also Henry, Shoemaker and Scott.

O. A. C. line-up: Goal, Beattie; defence, Nichol, Paterson; centre, Shoemaker; wings, Scott, Henry.

Basketball

Intermediate Intercollegiate

O. A. C. I., 14—VARSITY II., 17

The O. A. C. basketball team journeyed to Toronto, January 24th, to play their first game in the Intermediate Intercollegiate series. The game was not spectacular in any way, and the best of basketball was not played by either side. However, Varsity played well enough to win by the score of 17 to 14. In the last half O. A. C. held their opponents to 5 points and the college scored the same number.

Schenck started at centre for O.A.C., but was replaced by Felker in the first half. In the middle of the second half

Marshall took Heatherbell's place and Holman went off in favor of Schenck. Holman and Dickson each made a spectacular basket.

O. A. C. line-up: Schenck, centre; Holman, A. W. McKenzie, forwards; Dickson, Heatherbell, guards; subs, Felker, Marshall, Horne.

O. A. C. I.,34—WESTERN, 28

In one of the hardest fought games of the year, the Western University basketball team was defeated at O. A. C. by a score of 34-28.

The Londoners put up a hard battle from the beginning and kept it up throughout. The college team seemed unable to get going during the first half, with the result that at half-time Western was leading by 14-10.

In the second half the college held its own, with Western only one point ahead, until on a misunderstood ruling of the game, Western scored another basket, giving them a three-point lead. With two minutes to go, however, college tied the score, making it 26 all, and necessitating a five-minute overtime period.

With both teams out to win and each team giving of its best, the last five minutes of play were the most exciting of the game. During the first minute of play O. A. C. scored two baskets, which was quickly followed by Western netting one. The college men were not to be discouraged, however, and in the next few minutes scored twice again, giving them a six-point lead, which they held until the finish, making the red and blue winners by three baskets.

The game throughout was marked by clean, hard and good playing, although a fair percentage of fouls was called on both sides.

O. A. C.—Forwards, McKenzie, Wilson, Schenck, Holman; centre, Felker; guards, Heatherbell, Dickson, Marshall.

Sifton Cup Series

O. A. C. II., 44—ST. MIKE'S, 10

The first game for O. A. C. in the interfaculty series of basketball for the Sifton Cup proved an easy win for the second team. The game was played with St. Michael's College at Toronto, January 22nd.

The game was somewhat one-sided, our boys being too fast for St. Mike's. When the game ended, a total score of 44 points was obtained by O. A. C., while their opponents netted only 10. Wilson and McEwan for the college team played a fine game, and did not seem to be able to miss the basket. Buckley at guard put up a good game, and all the boys worked well.

O. A. C. line-up: Centre, McEwan forwards, Wilson, Stanley; guards, Buckley, Marshall; subs, McKenzie, O. Cameron, Schneiker.

ST. MIKE'S, 5—O. A. C. II., 42

A one-sided game of basketball was played between St. Mike's and O. A. C. Seconds, in the college gymnasium Saturday afternoon, February 3rd, when the college team won by the large score of 42-5. The St. Mike's players, though a little lighter, were outclassed in every position, but they tried gamely to the end.

The O. A. C. line-up: Centre, McEwan; forwards, Mowat, Stanley; guards, Buckley, Horne; subs, Daly, Schneiker.

City League

O. A. C. II., 31—MAPLE LEAFS, 24

The O. A. C. second basketball team on Saturday night, January 27th, defeated the Maple Leafs in the city Y. by the score of 31-24.

The college team took the lead in the first half and had much the better of the play. In the second half the Leafs came back strong and scored five field goals to the college's three. Stanley for O. A. C. was very efficient on foul shots.

O. A. C. line-up: McEwan, centre; Stanley, McGougan, forwards; R. M. McKenzie, O. E. Cameron, guards; Marshall, sub.

GUELPH OUTFITTERS, 17—O. A. C. II., 26

The Guelph Outfitters had to succumb to a defeat in basketball at the hands of the college seconds in the college gymnasium Wednesday night, February 14th. At half time the college team had a big lead, but at the end of the game the score stood 26-17. Kelly for the city team played their best game, while for the college all played well.

O. A. C. line-up: McEwan, centre; Stanley, Wilson, forwards; Buckley, Daly, guards; Cameron, R. M. McKenzie, Mowat, subs.

THE Editor of THE REVIEW had a very interesting letter from John A. Derbyshire, who attended O. A. C. about thirty-five years ago with Dr. Creelman, Prof. Dean, Mr. Raynor and other well-known men. Hon. Nelson Montieth gave the valedictory that year.

Some of those mentioned as being on the staff at that time were Dr. Mills, C. C. James, Prof. Panton, Prof. Brown, Dr. James W. Robertson and others. He relates how they were entertained by Dr. and Mrs. Mills, and how Geo. Creelman used to avail himself of all these Friday evenings. Those were the days when John Squirrel used to ring the gong and everyone was supposed to be in.

'03—W. D. Albright, Superintendent of the Grand Prairie Experimental Farms in the Peace River District, visited the College in February, on his way to Ottawa.

'07—F. H. Reed, of Lacombe, Alta., visited the College recently.

'09—P. H. Moore, of Essondale, B.C., attended the annual meeting of the live stock breeders in Toronto in February.

'09—N. D. McKenzie, who directs the Saskatchewan Experimental Farm at Indian Head, visited the College in February.

'11—Wade Toole, Professor of the Animal Husbandry Department at the O. A. C., is at Iowa State College at Ames, completing his post-graduate work for his M. S. A.

'11—C. L. S. Palmer was a recent visitor at the College. Until a short time ago he was farming near Burlington, Ont.

'11—R. G. Thompson, who was at one time Western Editor of the "Farmer's Advocate," and now farming near Indian Head, Sask., is back with the "Advocate" for the winter.

'11—Billy Packard visited the College in January. This is the first chance he has had to visit the institution since he graduated and he notices quite a few changes.

'11—R. J. R. Shorttle is now a bond salesman in Winnipeg.

'12—"Billy" (W. R.) Reek, now in charge of the Ridgetown Experimental Farm, visited the College in January. It will be remembered that Dr. Creelman succeeded Mr. Reek as Ontario Representative in London, England.

'16—E. E. Reilly, of the Farm Economics Department of the O. A. C., is now taking a post-graduate course at the University of Wisconsin, Madison, in Agricultural Economics.

B. G. Jenvey, who has been with the Farm Economics Department of the O. A. C. for the past five years, is going o farm for himself near Ingersoll, Ont.

'19—Roy Allan was at the College on February 15th, when he played goal for the Faculty of Education hockey team. Roy put up a good game between the posts.

'19—C. L. Luckham, who has been associated with the Farm Economics Department of the O. A. C. for the past five years, is leaving to take over the management of Prof. Graham's farm, "The Norfolk Specialty Farm," at St. Williams, Ont.

'20—Hugh Campbell is attending College of Education, and is playing with their hockey team. He was here with the team on February 15th.

'22—J. R. Sutherland is now with the Dairy Department of New Brunswick, with headquarters at Sussex.

'22—Miss "Frank" Hemming left the land of the Blue Noses to attend the Conversat, later visiting in Toronto and at her home in Ottawa. Frank likes Nova Scotia and the climate agrees with her. Sue Chase, '21, also fruit farming in the Maritimes, spent a few days at the college shortly after.

'23—Alex. Calder has started farming for himself at Lancaster, Ont. His friends say he is still single.

'23—Oliver Constable is with the MacGregor Cow-Testing Association, with headquarters at MacGregor, Iowa.

'24—A. W. K. Wise, who at present is putting up at the Cosmopolitan Club, has just returned from a trip to Germany and England, and has given us first-hand information as to conditions in these countries. He is undecided as to whether to go cow-testing in Ontario or go to New Zealand.

(Continued on page xx.)

The Difficulty

I OFTEN pause and meditate
  Upon the course to steer,
Upon the tools which I should use
  In carving my career.

A man must earn his daily bread,
  But Oh, I fear I'll starve,
For when I've found the implements—
  I don't know what to carve.

—Algol.

* * *

A Tell-Tale Tongue

It was a few days before the Conversat and this member of the first year degree had been concentrating for several days past on filling his program. The contemplation of the coming dances had kept his mind busy. Nevertheless he had to descend to the level of stock-judging and giving reasons. His sub-conscious mind was working when he placed No. 1 over No. 2, in a class of yearling ewes because of her slimmer waist and finer hair!

* * *

Oh. Not That!

Yes, it was a fire, even though only in a garbage can in the basement of Mac. Hall. Needless to state, the heroic O.A.C. men deluged it with all the available extinguishers. But—very quietly—how did it start? Some say hot curling irons, others from faulty electric fixtures—but, these would hardly be in a garbage can. Some, shame on them, hint at matches and—but, no, it could not be!

Truly Economic

First Junior—"Have you written that essay on marginal utility yet?"

Second Ditto—"Yes, and very well too. Wrote three pages and can't understand a word of it."

* * *

Visitor—"Your students appear very interested in their work. I've noticed several little groups in the halls discussing their notes."

Wiseacre—"Humph! they're filling dance programs."

* * *

Naturally

Short (in Biochemistry)—"What is there in lemons which will reduce weight? I notice the fellows who are getting down to weight are always sucking them."

Mr. Fulmer—"If they eat lemons and nothing else they will certainly reduce."

* * *

Training

Wrestling..
And boxing..
Are lots..
Of fun..
But..
When you have..
To stop eating,..
And drinking,..
And smoking,..
And skip,..
And run,..
And get up early,..
And go to bed early..
Until..
You're down to weight..

The fun..
And the pleasure......................................
Of fighting...
Becomes..
Of minor..
Importance.

* * *

Why the drinking glasses were disappearing from the Dining Hall was a puzzling problem until the logical reason flashed into our brain. The tumblers were going to Mac Hall, because most naturally they were needed for the gym team.

* * *

Heard in Hart House

"Is this 'O. A. C.' a faculty of the University?"

"No, I don't think so. They take a two-year course and come down here for a few lectures."

* * *

Not Phonetically

"Economy" written by Gide,
Has doctrines which most of us ride,
But we must admit,
The reading of it
On occasion has most of us tride.

* * *

Middle Hunt Freshmen recently devised a query which all their members, weak in college spirit, were forced to answer. It ran thus, "Will you go to the hockey game or swim?" At the toll of midnight, much splashing was heard in the bathroom, which leads us to believe that many Freshmen are cleaner now than they ever were before.

* * *

Doc Reed—"Who made that noise?"

Mr. T. (With visions of a free period) —"I did!"

Doc Reed—"Get out! No-o. Come back. You're the only sport in the class."

The class had previously been informed in a Poultry lecture that a sport was one which neither resembled its father or mother. The Doc should be more specific in his meaning.

* * *

Budding Freshman—"What does anhydrous mean, sir?"

Mr. Wheatley—"What word in Latin stands for water?"

Budding Freshman—"Aqua, sir."

Mr. Wheatley—"Oh! Excuse me, I must have been thinking of Greek."

* * *

It Would

Chem. Lecturer—"Wood tar is a prolific source of organic compounds."

Student (at back)—"Is that the same as pine tar?"

Lecturer—"Certainly—pine's wood, isn't it?"

And the multitude larfed.

* * *

Chem. Lecturer—"What is a test for a sugar solution?"

Student—"Taste it."

* * *

And Students Also

Two darkey stevedores were having a joyful reunion when Sambo said:

"Mose, I'se got a great job as Perfesser of Pathology up at de College."

Mose—"How come perfesser of Pathology?"

Sambo—"Say, nigger, don't yo' all know that the Perfessor of Pathology is de man what shows de visitors around de campus."

* * *

An enjoyable evening was reported by all those present at the last Hunt Debate. The meeting was held in "The Club Rooms" over the Dean's bedroom. The subject of discussion proposed by Mr. B. was an interesting one, "Was King Solomon a Nigger?" The Dean arrived at 11.30 p.m., attired in masque costume, filled the chair. Shortly afterwards the meeting adjourned without singing the National Anthem.

Heard in the Animal Husbandry Class

Lecturer—"What region constitutes the neck? I'd like to know."

Quick Reply—"I should say, sir, that region immediately in front of the shoulders."

* * *

* * *

Mr. Raithby—"Mr. P., how do you place this class of sheep?"

Mr. P.—"Well, tell ya the true, sah, I dunno these sheep apart. I just placed No. 3 up and de others, well, I jes mawked dem down."

* * *

The First Year Associate Class were recently informed by Mr. Spencer that a certain New York lady died from a hyatid which she contracted from kissing her dogs. The moral is, "Kisses were not meant for dogs."

* * *

Mr. McLean tells us that getting kisses from a girl is just like taking olives out of a bottle. After you get the first one, the rest just come naturally.

* * *

After the composition instructor had criticized a great many attempts at perfection, a voice piped up from the back of the class. "Sir, you haven't any good ones up there, have you?"

* * *

Front and Cold

Mr. P. (giving reasons in Animal Husbandry)—"She is very rough over the front shoulders."

Mr. Raithby—"By the way, how many kinds of shoulders are there?"

* * *

Now, '26!

Mr. Moffat—"Now, take the coils out of the bottle."

B—— (removing cork, which emits a popping sound)—"Boys! that sounds natural!"

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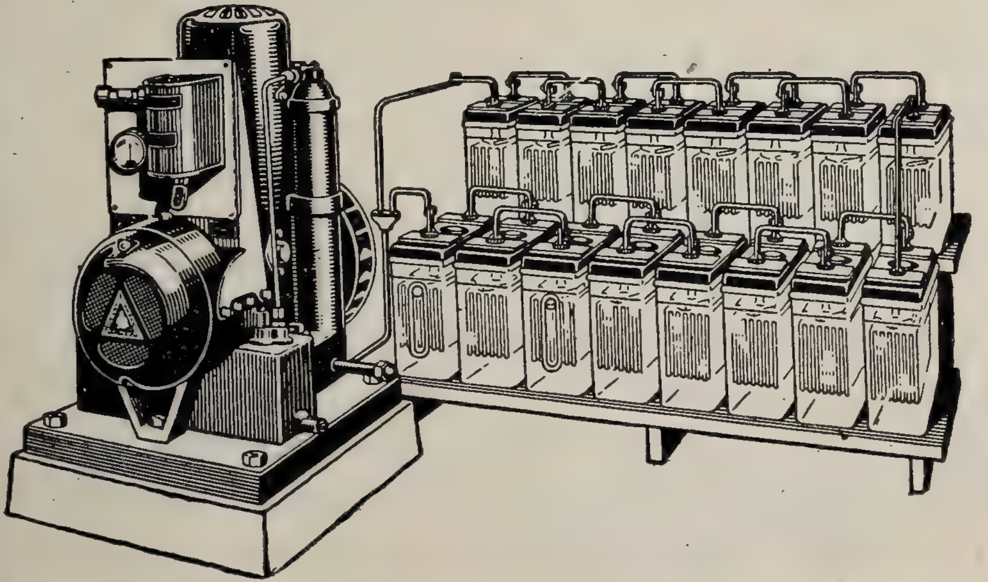

GENETICS IN FUR FARMING

(Continued from page 268)

hairs, animals possessing such fur are most prized, for they form the ideal foundation stock for breeding in quantity production a regular, uniform, dependable and salable product.

Further selection is controlling the amount of white desired on the tip of the tail and underparts, fixing in correct and modish proportions the distribution of the bright, not chalky, silver on the hips, eliminating all traces of the occasional insidious reversionary rusty tinges from the shoulders, and maintaining and increasing the length, lustre and softness of the outer fur and the thickness of the underfur. And some ranchmen are attempting to increase the size of the pelt by selecting from or crossing with the larger Alaskan black foxes.

IMPROVING SKUNK FUR

In wild skunks the black fur is usually broken by two white stripes of varying extent down the back. Fashion demanding solid black, the white portions have to be cut out and the smaller black pieces fitted together in the fur Breeders are seeking to reduce and eliminate the white stripes by selective breeding from favorable individuals. In their hunt for these they found abundant raw material in nature. In fact a remarkable series of promising color mutations was disclosed by living specimens sent in after correspondence with trappers in the northern states and Quebec. Some individuals were solid black, some seal-brown with the usual stripes, some nearly all white and some pure albino. These types are hereditary and pure strains of each of these colors may be reared, if close inbreeding is avoided. There seems no reason that even more valuable silver or blue mutants may not be found. "It is, however, difficult," as two improvers put it, "to say which of these forms would be most valuable, since of all mutations, that of woman's fancy in attire is the least predictable"!

In the skunk, as in foxes, hybrids of the color mutants show mendelian segregation of the color phases. In general color dominates albinism and solid black dominates white-striped, but in the second generation the parental types may be recovered in pure form or in new combination.

For each new wild form the proper breeding procedures must be discovered empirically, by "trial and error". "Grading up" by the pure sire method is seldom practicable in foxes, for only occasionally is a male polygamous, and silver-black is not prepotent in the hybrid. But in Karakul sheep one pure sire may be used with many Karakul or even with ordinary ewes having long coarse wool, as the Lincolns or Cotswolds, to produce lambs with the best fur. A similar method may be used in skunk raising, a high grade dark male being prepotent and producing high grade skins in the offspring by any mother. On the other hand, there is serious danger from inbreeding or close breeding in these animals, while in foxes no injury seems to follow even a considerable number of the closest matings.

Fur farming is by its nature highly specialized and probably destined to remain restricted in area according to climatic needs and local competition with ordinary farming. It would seem, however, that two of the main aims of reconstructive conservation—saving forests and their wild life—might well be undertaken and encouraged simultaneously. Preservation of forests and reforestation are prerequisite to the conservation of much of the wild fauna and flora, and, besides, to please the utilitarians, a "use" would be found for many "idle" and "barren" waste lands, hillsides, woodlands, swamps and streams.

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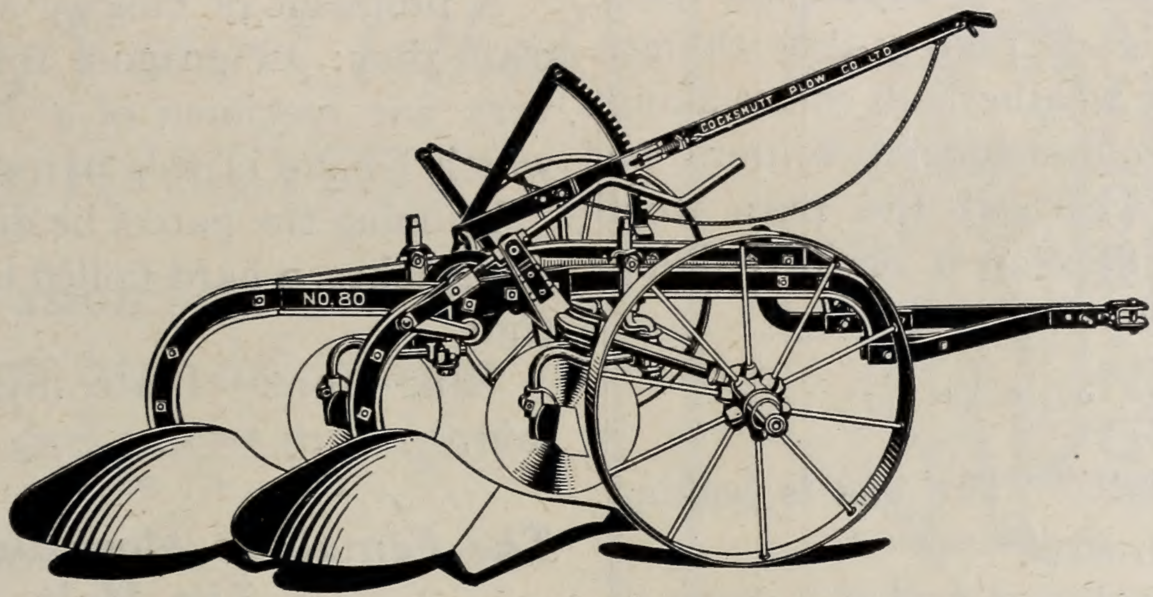
If you don't love to rise at dawn,
And milk the cows without a yawn,
And feed some hay to the cheveaux,
And watch the little porkers grow,
And do the other little chores.
If you don't love the out-of-doors—
The fields of oats and hay and wheat,
And all the extra things to eat;
Corn on the cob and plums and cherries
And half a dozen kinds of berries;
If you don't love to do hard work
In proper season and not shirk;
If you don't love to take your ease
In leisure time beneath the trees;
Take time to play a little game,
(The world will roll on just the same),
If you don't love these things to do—
Move on; the farm's no place for you.

—Jack-Knife Poet, '22.



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We all know those people who are forever deploring the supineness and general inertia of present-day things. Yet, when the weatherman comes along with a real old-fashioned winter, we notice they wear all the pure wool possible and develop a decided liking for cozy firesides.

* * *

Fresh. in lab.—"The gas is leaking from this tap, sir."

Busy Instructor—"And you come to me about it? Get some putty and plug it up. Use your head boy! Use your head!"

* * *

A gentleman, apellated King,
Once kidded himself he could sing.
His rollicking warble
Was all the more horr'ble
Since he put his whole soul in the thing.

Was It Our G. J.?

A professor of biology addressed his class thus: "I propose to show you a very fine specimen of a dissected frog which I have in this parcel."

Undoing the parcel he disclosed some sandwiches, a hard-boiled egg and some fruit.

"But—surely I ate my lunch!" he said.

* * *

The Female is More Deadly Than The Male

The gents are raving 'bout the guy,
The stingiest ever met—
That guy who's always at your heels
With, "You gotta cigarette?"

Now, I would like to rise herewith,
And can that borrowing stuff.
There still are left some maidens fair
Who borrow your powder puff.
—Daily Californian.

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First, a good and pleasant site, where there is a good and wholesome constitution of the air; composed with waters, springs or wells, woods or pleasant fields; which being obtained are enough to invite students to stay and abide there. As the Athenians in ancient days were happy for their conveniences, so also were the Britons, when by a remnant of the Grecians that came amongst them, they or their successors selected such a place in Britain to plant a school or schools therein, which for its pleasant situation was afterwards called Belloritum or Bellosite, now Oxford, privileged with all those conveniences before mentioned.

—*Anthony-a-Wood, Newman's "Site of a University."*

* * *

Betty: "Billy and I have parted forever."

Doris: "What does that mean?"

Betty: "A five-pound box of candy."

Oh Horrors!

It was evening and several callers were chattering in the parlor, when a patter of little feet was heard at the head of the stairs. Mrs. K—— raised her hand for silence.

"Hush, the children are going to deliver their good-night message," she said, softly. "It always gives me a feeling of reverence to hear them. They are so much nearer the Creator than we are, and they speak the love that is in their little hearts never so fully as when the dark has come. Listen!"

There was a moment of tense silence. Then—

"Mamma," came the message in a shrill whisper, "Willie found a bedbug."

* * *

"This," said the very foolish person as he removed his ear from the very fair person's hair net, "is what I might call an entangling alliance."—Pelican.

ALUMNI

Continued from page 300

'24—Fred Smith is now living at Parnell, Auckland, N.Z., where he is bacteriologist for the city. He finds conditions changed in the two years he was at O. A. C.

'24—O. E. Marshall has left to take up cow-testing work in Indiana.

BIRTHS

McMullin—To Mr. and Mrs. W. B. McMullin, of Bruce Mines, on November 24th, 1922, a son, John Henry.

Mac was an original of '17 and graduated in 1920. We feel that it is not too late to publish this news and extend congratulations to Mac and Mrs. McMullin.

Hood—To Mr. and Mrs. Geo. B. Hood, on February 11th, at Strathcona Private Hospital, a son and daughter.

George, '20, since graduating has been associate editor of the "Canadian Countryman".

DEATHS

Hood—Infant son of Mr. and Mrs. George B. Hood, on February 11th.

We should like to hear from the many Year Alumni Associations. These organizations are supposedly formed to keep the men of each year informed of the whereabouts of its members. THE REVIEW is the logical medium for the purpose. We would welcome news letters.

Graduates who attended the Conversat were: Lindala, '22; Fricker, '23; W. G. Toner, '22; J. C. St. John, '21; Bert Tolton, '22; H. J. Maybee, '21; Fred. and Mrs. Stock, '21; G. I. Arnold, '22; R. J. Rogers, '22; W. S. McMullen, '22; H. E. Cook, '22; S. H. Bohn, '22; J. A. McAdam, '21; F. Lindsay, '22; H. W. Jamieson, '21; L. D. Jackson, '21; G. H. Jackson, '21; R. G. Hawkins, '22; F. J. Webster, '22; Kenneth Crews, '22; Gordon Whiteside, '22; H. R. Clemens, '22; N. J. McCully, '24.

Agriculture Attendance in Canada

The following totals for attendance of students in agriculture and home economics in 1922-23 at the various colleges are interesting. They are taken from the Agricultural Gazette of Canada:

ONTARIO AGRICULTURAL COLLEGE

Students in Agriculture	362
Students in Home Economics	173

MACDONALD COLLEGE

Students in Agriculture	58
Students in Home Economics	70

MANITOBA AGRICULTURAL COLLEGE

Students in Agriculture	137
Students in Home Economics	112

COLLEGE OF AGRICULTURE, UNIVERSITY OF SASKATCHEWAN

Agricultural Students	152

COLLEGE OF AGRICULTURE, UNIVERSITY OF ALBERTA

Students in Agriculture and Home Economics (Combined)	85

COLLEGE OF AGRICULTURE, UNIVERSITY OF BRITISH COLUMBIA

Students in Agriculture	84

NOVA SCOTIA COLLEGE OF AGRICULTURE

Students in Agriculture (Two Year Course)	44